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ABSTRACT

This annotated bibliography covers documents concerning behavioral objectives. Many of the annotations are more lengthy than usual in order to help local school personnel decide which documents will best suit their needs. The four divisions of documents include: how-do-do-it publications, issues relating to the objectives-evaluative movement, references relating to the classification of educational objectives and the theories of conditions of learning, and audio-visual materials relating to behavioral objectives. Publishers' addresses are included. (MJM)

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An Annotated Bibliography

September 1971

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Des Moines, Iowa 50319

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CONTENTS

Part One: How-To-Do-It Publications 1

Part Two: Literature on Issues Relating to the Objectives-Evaluation Movement 13

Part Three: References Relating to the Classification of Educational Objectives and the Theories or Conditions of Learning 36

Part Four: Audio-Visual Materials Relating to Behavioral Objectives 57

Publishers' Addresses 63

Explanatory Comments

These annotations are intended to be *descriptive*, not *evaluative*. Except as the contents of the descriptions may reflect bias, there is a general absence of words that are synonymous with "excellent," "best," and so on. The goal has been to place before the busy teacher and administrator information (including complete publishers' addresses and prices) about a variety of available materials relating to the area with which this bibliography is concerned.

The annotations are somewhat more lengthy--in most cases--than is typical. This has been done to assist local school personnel to be better able to decide whether or not to add given items to their professional libraries.

The items in the bibliography are arranged alphabetically within each part. They are also numbered in order to facilitate the cross-referencing which is included in some of the annotations.

Schools seek to bring about desirable changes in pupils or students. The cover design is adapted from A Student-Change Model of an Educational System that has come to be called "Dyer's Wheel." (See Henry S. Dyer, "Can We Measure the Performance of Educational Systems?," The Bulletin of the National Association of Secondary School Principals, LIV (May, 1970), 96-105.) Dyer says that (from the early-childhood age through senior high school) the "four groups of variables that enter into the workings of an educational system" are *"input, educational process, surrounding conditions,* and *output."* He identifies the home, the community, and the school as the "surrounding conditions" that interact with the "educational process."

Part One: How-To-Do-It Publications

I-1 Armstrong, Robert J. and others. Developing and Writing Behavioral Objectives. Tucson: Educational Innovators Press, 1970. Pp. 63. Paper. $2.25.

Described by the group of editors who prepared it as a Booklet for Developing Evaluative Skills, it purports to focus "on one of the most frustrating problems connected with evaluation--that of clearly and systematically developing and writing behavioral objectives which can be evaluated with validity and reliability."

It opens by presenting and explicating a diagram or model of a four-phase evaluation procedure called "A Scheme for Evaluation." This is followed by a chapter that displays in three-dimensional form "An Organizational Structure of Variables Affecting Educational Programs." The dimensions are: institutional, behavioral (including the variables: *cognitive*, *affective*, and *psychomotor*), and instructional.

The major portion of the booklet is devoted to the explication of behavioral variables in the cognitive, affective, and psychomotor domains; and to guided practice in developing, writing, and critiqueing behavioral objectives in each domain.

One chapter, "Writing Objectives for Varying Levels of Specificity," presents examples of objectives developed for the state, the district, the school, and the classrooms--all in the same format ranging from the general to the specific. A diagram, "Organizational Structure of Objectives at Different Levels of Specificity," is included.

The concluding chapter defines and discusses two types of performance objectives (*product* and *process*) as defined by the U. S. Office of Education.

I-2 Bemis, Katherine A. and Glenn B. Schroeder. The Writing and Use of Behavioral Objectives. Albuquerque, New Mexico: Southwestern Cooperative Educational Lab., 1969. Pp. 74. For availability, see note following the annotation.

"This manual, specifically designed to accompany formal instruction in the writing of behavioral objectives, is also intended for use by individuals desiring knowledge of behavioral objectives and behavioral domain concepts. The introductory chapter on rationale for use of behavioral objectives outlines an instructional cycle designed to aid teachers in making curricular decisions and in preparing evaluative measures of pupil

progress. The major section on the behavioral domains includes (1) discussion justifying teachers' concern with the classification of behavior, (2) presentation of the hierarchical structure of the cognitive, affective, and psychomotor domains with examples of behavioral objectives for each class or level in the taxonomy, and (3) illustration of the interrelationship of the three domains. This section is supplemented with a condensed version of the taxonomy of educational objectives in each domain: cognitive (Bloom, 1956), affective (Krathwohl, 1964), and psychomotor (Simpson, 1966). Other chapters deal with 'entering behavior,' that which a learner should have acquired or be able to demonstrate before he can perform that called for in an objective; with the actual formulation of behavioral objectives with three components: the doer, the overt behavior (action verb), and the given conditions and standards; and with the classroom application of behavioral objectives."

--"Document Resumes," Educational Resources Information Center (ERIC):Research in Education (RIE), (March, 1970), 88-89. ED 033 881.

Note: As indicated, this annotation is *borrowed*. Availability of the original publication is not known. However, a microfiche (MF) copy--4" x 6" sheet of microfilm on which up to 70 pages of text are reproduced--is available from the ERIC Document Reproduction Service (EDRS) at a price of $.65 per title. A hard copy (HC) reproduction of the document on paper at the original size has a price of $3.29. Payment must accompany orders under $10.00. Orders must include the accession number (in this case, ED 033 881), type of reproduction (HC or MF), and the number of copies. The address is:

ERIC Document Reproduction Service
Post Office Drawer O
Bethesda, Maryland 20014

I-3 Esbensen, Thorwald. Using Performance Objectives. Tallahassee: State of Florida, Department of Education, April, 1970. Pp. 40. Paper. $2.00.

A guide to the preparation of performance objectives "expressed in a way that makes clear what it is that a student must do to show that he has accomplished them." Defines a performance objective, presents a dialogue between a "friend" and a "critic" of the use of performance objectives as a means of setting forth arguments for and against such use, classifies objectives as "direct" and as "indirect or representational" and gives examples of each type, and discusses the preparation and use of behavioral objectives in the *affective* as compared with the *cognitive* and *psychomotor* domains. In a section entitled "Size

of Objectives," offers practical suggestions to the teacher who may fear that he cannot "really teach" if he "has to spend most of his time checking students in and out of objectives." Concludes by discussing briefly new "Roles for Teachers" and maintains that "the role of the teacher is one of *decision-making*--in particular, making decisions concerning the instructional environment so as to promote self-directed learning."

I-4 Flanagan, John C., Robert F. Mager, and William M. Shanner. Behavioral Objectives--A Guide to Individualizing Learning: Language Arts. Palo Alto, California: Westinghouse Learning Press, 1971. Pp. xviii + 151. $15.00 (individual); $59.50 (full set).

This is one of four books under the same general title. Individual books in the series are devoted to these areas: language arts, mathematics, science, and social studies.

These books contain objectives used in connection with Project PLAN (Program for Learning in Accordance with Needs). "Project PLAN is a system of individualized instruction, operative at grades one through twelve in the subject areas of language arts, mathematics, science and the social studies." The objectives were written by teachers and they "have been tried out in schools."

Each book--in the preface and introduction--presents the background for the development of the objectives included; defines the levels: primary, intermediate, and secondary; gives the topics covered in each of the four subject areas; and describes the classification system used to identify the objectives included.

The writers state that not all of the objectives included in these books can be considered as "*true objectives*" when judged by generally accepted specifications. It appears that "*statements*" that are not adequately expressed as objectives have been included to show the *learning experiences* through which teachers must go as they attempt to write fully refined behavioral objectives.

I-5 _____. Behavioral Objectives--A Guide to Individualizing Learning: Mathematics. Palo Alto, California: Westinghouse Learning Press, 1971. Pp. xviii + 139. $15.00 (individual); $59.50 (full set).

See I-4.

I-6 _____. Behavioral Objectives--A Guide to Individualizing Learning: Science. Palo Alto, California: Westinghouse Learning Press, 1971. Pp. xviii + 129. $15.00 (individual); $59.50 (full set).

See I-4.

I-7 _____. Behavioral Objectives--A Guide to Individualizing Learning: Social Studies. Palo Alto, California: Westinghouse Learning Press, 1971. Pp. xviii + 185. $15.00 (individual); $59.50 (full set). $10.00.

See I-4.

I-8 Gorth, William P.; Peter E. Shriber; and Robert P. O'Reilly. Comprehensive Achievement Monitoring: Its Design and Use. Amherst: School of Education, University of Massachusetts, 1971. (Preliminary edition) $10.00. Note: Draft copy had 293, 8½ by 11 inch pages.

Presents a teaching-learning model based on the use of behavioral objectives. Includes a chapter giving illustrative examples of step-by-step development of objectives and tests to measure their achievement.

I-9 Gronlund, Norman E. Stating Behavioral Objectives for Classroom Instruction. New York: The Macmillan Company, 1970. Pp. vi + 58. Paper. $1.50.

"This book," says the author, "is intended as a practical guide on preparing instructional objectives for teaching and testing." He seeks to avoid the extremes of objectives stated in "vague and ambiguous" terms and those stated "in such specific terms that they [end] up with long, unmanageable lists of tasks . . . [which stress] only the lowest levels of knowledge and skill--to the neglect of understanding, interpretation, application, and other complex learning outcomes."

The author gives his own annotation as follows:

> The first three chapters describe and illustrate the procedure for identifying and defining instructional objectives as learning outcomes. In these chapters frequent opportunity is provided for choosing between well-stated and poorly-stated outcomes. Chapter 4 illustrates how the *Taxonomy of Educational Objectives* can be used in preparing instructional objectives. Chapter 5 presents the factors involved in selecting objectives for a particular instructional area. The final three chapters describe the use of objectives in classroom instruction, in test preparation, and in marking and reporting. Three helpful guides are included in the appendix: (1) a check list for evaluating objectives, (2) a list of verbs for defining objectives in behavioral terms, and (3) a list of reference guides that are especially useful in identifying and defining instructional objectives.

On the first page a distinction is made between *teaching activity* and *learning outcomes* and the author says, ". . . our focus shifts from the teacher to the student and from the learning *process* to the learning *outcomes*." Yet recognition of the importance of "teacher activity" is demonstrated by his "Instructional Planning Chart" which has three columns headed, respectively: *Instructional Objectives*, *Teaching Methods*, and *Evaluation Techniques*.

An index is provided.

I-10 Hernandez, David E. Writing Behavioral Objectives: A Programmed Exercise for Beginners. New York: Barnes & Noble, Inc., 1971. Pp. vi + 45. Paper. $1.50.

"This book is designed to teach learners how to analyze and write behavioral objectives through a programmed exercise approach," says the author in the first sentence of the Preface.

The book has three parts as follows:

Part I: What Is a Behavioral Objective?
Part II: Flexibility and Conditions
Part III: Supplementary Programmed Exercises
Bibliography
Glossary of Selected Terms

It is arranged in a self-study and self-checking format.

I-11 Instructional Objectives Exchange. English Literature, 10--12. Los Angeles: The Instructional Objectives Exchange, undated. Pp. xxii + 236. Duplicated typewritten copy. $8.00. Note: This entry and the following one are examples. Objectives in other subject areas are available.

In a loose-leaf format, objectives--each with one or more measures to assess its attainment--are given.

It is intended that the user select those objectives that are consistent with the goals being sought in the local instructional situation.

It is suggested that the teacher-user do two things: (1) prepare objectives to fill gaps, and (2) provide feedback to the Instructional Objectives Exchange by completing and returning the Instructional Objectives Exchange User Questionnaire which is included in the booklet. (See I-18.)

I-12 _____. English Skills, 10-12. Los Angeles: The Instructional Objectives Exchange, undated. Pp. xviii + 93. Duplicated typewritten copy. $8.00.

In a loose-leaf format, objectives--each with one or more measures to assess its attainment--are given in speech, mass media, and composition.

It is intended that the user select those objectives that are consistent with the goals being sought in the local instructional situation.

It is suggested that the teacher-user do two things: (1) prepare objectives to fill gaps, and (2) provide feedback to the Instructional Objectives Exchange by completing and returning the Instructional Objectives Exchange User Questionnaire which is included in the booklet. (See I-18.)

I-13 Johnson, Stuart R. and Rita B. Johnson. Developing Individualized Instructional Material. Palo Alto, California: Westinghouse Learning Corporation, 1970. Pp. vi + 108. Paper. $3.75.

The authors bill this publication as "A self-instructional material in itself." Essentially, it is "a course for teachers designed to help them in the preparation of material necessary for the individualized instructional process." The material in the booklet was successively revised after a series of tryouts with groups of junior college faculty members. The aim is to enable teachers who complete the course to "be able to produce a short instructional package which will be tested in one of [their] classes and revised until it is effective." The three components of each individualized, self-instructional learning package (which "should have provisions for treatment of topics in small group or individual conferences, where teachers can also individualize the content of the package") are *objectives*, *instructional activities*, and *education measures*.

The five chapter titles are:

I. Specifying and Analyzing Objectives
II. Measuring Attainment of Objectives
III. Arranging Instructional Activities
IV. Selecting and Designing Methods and Materials
V. Refining the Instructional System

One feature of Chapter IV is a definition of the *audio tutorial lesson* and a step-by-step guide for its preparation.

While drawing on the general literature on the so-called "systems approach to instruction" included in currently available books on behavioral objectives, this publication is directed primarily to teachers in community or junior colleges.

Among items in the appendices are a summary of the classification of educational objectives in the cognitive, affective, and psychomotor domains; an extensive categoration of "Criterion Measures to Determine Learner Achievement"; and a listing of twenty-five principal "Methods of Instruction."

I-14 Kibler, Robert J., Larry L. Barker, and David T. Miles. Behavioral Objectives and Instruction. Boston: Allyn and Bacon, Inc., 1970. Pp. xii + 196. Paper. $3.95.

Dedicated to Tyler, Mager, and Popham--three persons frequently mentioned in connection with the current emphasis on instructional objectives--this book "represents an effort," say its writers, "to identify the important functions behavioral objectives can serve in improving instruction." They "hope the book will make a modest contribution to the continuing effort to improve the quality and efficiency of instruction by shaping favorable attitudes toward the use of behavioral objectives, by informing individuals about the nature and characteristics of behavioral objectives, and by teaching educators to write behavioral objectives."

The authors have written their own annotation, claiming the following "unique contributions":

1. It presents material relative to behavioral objectives from a variety of sources in a single volume.
2. It presents a classroom-tested model of instruction that illustrates the relationships of behavioral objectives to the instruction-learning process.
3. It prescribes an approach to objectives based on planning instruction and informing others of instructional goals.
4. It analyzes, in substantially more detail than has been available to date, the elements contained in objectives that are required to plan instruction.
5. It presents an original, taxonomic classification for the psychomotor domain.
6. Appendix A provides a variety of sample behavioral objectives for different areas of study. Teachers can use these as models in preparing their own behavioral objectives.

After defining behavioral objectives, their function in the instructional process is shown through the use of a "General Model of Instruction." This model forms the basis for a series of practice exercises for the reader to complete in order to be sure that he is learning what the authors want him to learn. Extensive, self-checking practice in identifying and writing objectives in each of the three domains is provided for the reader.

A four-page bibliography; a postscript by W. James Popham, "Probing the Validity of Arguments Against Behavioral Goals;" four appendices (pp. 125-190): "Samples of Behavioral Objectives" (mostly at secondary-school and college levels), "A System for Defining Achievement Descriptions for a Teacher Education Program," "Instrumentation of Bloom's and Krathwohl's Taxonomies for the Writing of Educational Objectives," and the "Instructional Objectives Exchange;" and an extensive index round out this book.

I-15 McAshan, H. H. Writing Behavioral Objectives: A New Approach. New York: Harper and Row Publishers, 1970. Pp. xii + 116. Paper. $2.50.

"This book /designed either for individual or group use and subjected to tryouts in workshops for teachers in Florida/ deals with the techniques or mechanics of writing behavioral and other types of performance objectives using a goals approach." Each chapter is preceded by a statement of an objective expressed in the format developed in the book.

The opening chapter develops a rationale for the current emphasis on the writing and use of behavioral objectives "based upon the observed needs, designing activities to bring about the necessary improvement, and then evaluating the results." A review of the movement toward the use of the objectives-evaluation approach to instruction and an identification of *caution* raised by critics of the movement and how to cope with the pitfalls to which they refer round out the chapter.

Three successive chapters build on the outline given in the introductory chapter in a step-by-step, how-to-do it fashion with numerous examples of objectives relating to various areas and levels of learning. The final two chapters are devoted, respectively, to "Unique Writing Problems" and "Guidelines for Writing Objectives."

A bibliography with brief annotations is included.

I-16 Mager, Robert F. Developing Attitude Toward Learning. Palo Alto: Fearon Publishers, 1968. Pp. viii + 105. Paper. $2.00.

". . . *things surrounded by unpleasantness are seldom surrounded by people.*"

"This book is *not* about what to teach. It is simply about a way to help students get the best use of what they have been taught, and about how to influence them to learn more about your favorite subject after they have left you.

"If you do not care whether your students use what you have taken the trouble to teach them, this book is not for you."

The above quotations are from the preface of this publication consisting of ten brief chapters arranged in three parts: "Where Am I Going?," "How Shall I Get There?," and "How Will I Know When I've Arrived?"

It's a book about instructional objectives and how to achieve them with the appropriate use of "affective" approaches. Each chapter is signaled by an aphorism--Chapter 3 on "Developing the Objective": "If you're not sure where you're going, you're liable to end up someplace else."; Chapter 7 on "Positives and Aversives": "People learn to avoid things they are hit with." The term *affect analysis* (p. 84) aptly describes the tone of this little book.

The final chapter, "Improving Results," describes "a procedure by which you can observe and analyze your own instruction." It presents four "areas for observation": the *instructor*, *instructional materials and devices*, *physical environment*, and *administrative rules or policies*. It then presents three categories of questions for each of the four areas: *contact difficulty*, *contact conditions*, and *contact consequences*.

An "Epilogue" insists that: "To be a professional means to accept responsibility. . .. When we accept the responsibility for professionally influencing the lives and actions of other people, we must do all we can to make that influence positive rather than negative. When we accept the money and the trust of the community, we must accept not only the responsibility for sending our students away from us with as much knowledge and skill as is within our power to give them, but also for sending them away with the ability and the inclination to use those skills to help themselves and others."

"A Time for Tribute" relates the author's tryout of the contents of the book on a group of teachers, graduate students, and others who "made marks all over my neat pages."

The last two pages list selected references relating to the preparation and use of objectives and ways to bring about performance changes.

I-17 _____. Preparing Instructional Objectives. San Francisco: Fearon Publishers, 1962. Pp. xii + 60. Paper. $1.75.

"This programmed text includes a self-test of its contents and demonstrates how to specify instructional objectives by behavior observable in a learner, and how to write objectives, define desired terminal behavior, and state criteria of successful learning."

--"Document Resumes," Educational Resources Information Center (ERIC): Research in Education (RIE), (September, 1968), 85. ED 018 143.

I-18 Popham, W. James. Potential Uses of IOX Objectives. Los Angeles: The Instructional Objectives Exchange, January, 1970. Pp. 15. Duplicated typewritten copy. Free.

Popham describes the resources of the Instructional Objectives Exchange and how they may be used in local school systems as they pursue ". . . *a commitment to the desirability of well-defined instructional goals and to objective-based evaluation.*"

He tells how the "bank of instructional objectives" is developed and operated and offers suggestions for its use. There follow after the Introduction these sections: "Selection of Objectives," "Instruction," and "Evaluation."

A bibliography of books and audio-visual aids--all related to behavioral objectives and their use--is included.

I-19 _____ and Eva L. Baker. Establishing Instructional Goals. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970. Pp. x + 130. Paper. $2.25.

This book is arranged in a self-study format covering five programs: "Systematic Instructional Decision Making," "Educational Objectives," "Selecting Appropriate Educational Objectives," "Establishing Performance Standards," and "A Curriculum Rationale."

Each *program* has a stated objective and a series of self-checking practice exercises designed to lead the reader to the achievement of the objective as measured by a *mastery test*. The first program or unit presents "An Empirical Instructional Model" consisting of four components: *"Specify Objectives," "Pre-assess," "Select Learning Activities,"* and *"Evaluate."* The following paragraph explains the sequence and accompanying feedback as the model is used:

> The teacher first specifies precise objectives in terms of pupil behavior. Second, he pre-assesses the learners' behavior with respect to the objectives and, as a result, may modify his objectives. Third, he devises an instructional sequence consistent with the best that is known regarding how pupils learn. Fourth, he evaluates the post-instruction performance of the learners and makes appropriate decisions regarding his instructional sequence and/or the quality of his objectives.

The remaining programs in the book are developed in the same manner.

Diagrams and cartoons appear throughout as an aid to the reader. Specific examples appear to illustrate how to write objectives; how to select objectives in the cognitive, affective, and psychomotor domains of pupil behavior; how to establish and express performance standards; and how to establish a system and procedure for dealing with questions relating to curriculum planning.

"A set of filmstrip-tape instructional programs coordinated with the contents of this book is available from Vimcet Associates, Inc., P. O. Box 24714, Los Angeles, California 90024. Information regarding these materials is available upon request."

I-20 _____. Systematic Instruction. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970. Pp. x + 166. Paper. $2.50.

The authors of this book say: "For a number of years now, we have been advocating a systematic approach to instructional decision-making." Unable to find books that satisfied them for textbook

use with pre- and in-service teachers, they prepared this one. It has been designed for use in conjunction with two other self-instructional books by the same authors: Establishing Instructional Goals and Planning an Instructional Sequence (available also from Prentice-Hall, Inc.).

The opening chapter stresses the "crucial role" of the teacher, reviews inadequacies in our current programs for the preparation of teachers, and states that: "The approach in this text . . . is to present and advocate a very simple instructional model . . . ." They say, "The instructional model offered here can be readily mastered, yet is powerful enough to make a real difference in what youngsters learn."

The model identified as "A Goal-Referenced Instructional Model" is presented and explained in the second chapter. It is a four-step model with feedback loops indicated. Its four components are: "Specification of Objectives," "Pre-assessment," "Instruction," and "Evaluation."

Successive chapters are devoted to an elaboration of the steps associated with the application of the model. Objectives and their preparation, curriculum decisions to be made, the designing of instructional activities, "classroom transactions" (that is, "the act of teaching"), "classroom management" ("classroom control"), and "evaluation of instruction" are discussed.

A concluding chapter, "The Teacher as an Experimenter," regards any teacher who systematically checks the effect of his instructional efforts in terms of their pupils' attainments and revises his procedures accordingly as a "*teacher-empiricist.*" But some teachers may want to move to the level of "*teacher-experimenter.*" The chapter presents brief descriptions of possible designs for such teachers to use.

Suggested references for additional reading appear at the close of each chapter. An index is provided.

I-21 Walbesser, Henry H. Constructing Behavioral Objectives. College Park, Maryland: The Bureau of Educational Research and Field Services, 1970. Pp. viii + 186. $2.25.

This publication is a workbook devoted to the preparation of technically acceptable behavioral objectives. The author expresses his opinion that there would be a greater use of behavioral objectives in instructional programs if there were more information of a "how-to-do-it" variety available. He says, "The book is written in the form of instructional narrative. The purpose of the instruction is to furnish the reader with the technical competence necessary for the construction of behavioral objectives."

Units One and Two have as their overall purpose to teach the user *how* to write objectives. The appendix (103 pages) consists of "learning activity materials." The author says, "This is a set of instructional materials on behavioral objectives." It aims to lead the user to achieve each of 19 stated objectives; for each objective, there is first an "instructional activity"; and then, for each objective, there is a corresponding "assessment task" for the individual to use as a check on his "acquisition of the objective." The objectives are "ordered" (that is, arranged in sequence) with each one to be attacked by the user after he has acquired "the prerequisite behavior" (that is, when he has achieved the objectives that have preceded it in the sequence).

While it has been said that a clearly stated performance objective that is fully understood by the student makes formal teaching almost unnecessary, Walbesser provides "instructional activities" to accompany each of the 19 objectives.

Part Two: Literature on Issues Relating to the Objectives-Evaluation Movement

II-1 Airasian, Peter W. "Behavioral Objectives and the Teaching of English," English Journal, LX (April, 1971), 495-499.

This article is, in part, a reply to one by Hans P. Guth in the September, 1970 issue of the same magazine (see II-16). Airasian says, "Use of and belief in behavioral objectives rest ultimately with the individual teacher. It is, therefore, the individual teacher who must decide upon the *pros* and *cons* [Italics added] of arguments about objectives. To make his decision more intelligently, however, he ought to be aware of the assumptions of the position he adopts. The purpose of this paper is to clarify such assumptions with respect to behavioral objectives."

As well as responding to ". . . Guth's prime indictments of objectives for the teaching of English. . . ," he states and illustrates his own assumptions regarding the place of behavioral objectives, especially at the elementary- and secondary-school levels.

II-2 Atkin, J. Myron. "Behavioral Objectives in Curriculum Design: A Cautionary Note," The Science Teacher, XXXV (May, 1968), 27-30.

Expresses reservations about the use of behavioral objectives and states that ". . . the fundamental problem, as I see it, lies in the easy assumption that we either know or can readily identify the educational objectives for which we strive, and thereafter the educational outcomes that result from our programs."

II-3 Bennett, Robert A. "From Commas to Cosmos," Elementary English, XLVIII (February, 1971), 155-161.

This article is the printed version of an address before a conference relating to *behavioral or performance objectives* held in 1969 under the sponsorship of the National Council of Teachers of English. The introductory paragraph reads as follows:

> To what extent are we concerned with commas--with practical social and economic survival through mastery of English language conventions? Or to what extent are we concerned with the cosmos--with providing man, through our discipline, a vision of what he is and what he might become? The objectives we set for the English curriculum will be based, in part, on our answers. For too long we have set up these two questions as an 'either/or' dichotomy. Today our purpose is to examine both commas and cosmos as polar concepts of a continuum that unifies the entire English curriculum.

He presents a chart of the continuum to which the opening statement refers. At one extreme, he places the "product-oriented curriculum" at one end and the "process-oriented curriculum" at the other. His position is that neither end of the continuum can be ignored.

An important section is devoted to a sketch of a developmental approach whereby the student, as he progresses up through the elementary- and secondary-school levels, develops competence in the oral and written use of "language options" to fit "a different audience or purpose."

He states that English teachers have long used behavioral objectives, and adds this comment: "The red pencil too often gets in the way of our communicating with the student. The pencil finds too easily the spelling errors, the incorrect usages, the omitted marks of punctuation. It is much more difficult for the red pencil to react to what the student is saying. English teachers are certainly more than correctors. It is the process of language production, rather than just its product, with which we must be concerned." Again, he does not discard the importance of *product*, as is indicated by the use of the word *just* in this quotation.

Sections on "Power in Language," "Literature," and "Literature and Reading" round out Bennett's attempt to place the concept of behavioral objectives in perspective. He refers to the "heavy gravity of a product-oriented curriculum" and "the lighter gravity of a process-oriented curriculum" and appears to find a place for each while showing a strong preference for the latter.

II-4 Block, James H. "Criterion-referenced Measurements: Potential," School Review, LXXIX, (February, 1971), 289-298.

A reply to Ebel's article (see II-10) appearing in the same periodical.

Asserts that ". . . the measurements defended here are those currently being developed and advocated, *not* [italics added] those briefly defined in Ebel's opening remarks. The defended measurements are *absolute* indices designed to indicate *what* the pupil has or has not learned from a given instructional segment. The measurements are absolute in that they are interpretable solely vis-a-vis a fixed performance standard or criterion and need not be interpreted relative to other measurements. They indicate what the student has or has not learned because they are taken on a fully representative sample of skills (content and behaviors) drawn from those he was expected to learn."

Discusses the two major respects in which "criterion-referenced" measurements are different from those discussed by Ebel, and replies in turn to each limitation expressed by Ebel.

Concludes that "criterion-referenced" measurements instead of "norm-referenced" measurements are essential as a base for ". . . the pinpointing and correcting of deficiencies in each student's skill learning. . .."

II-5 Carroll, John B. "A Model of School Learning," Teachers College Record, LXIV (May, 1963), 723-733.

Carroll is credited with having been one of the most effective architects of what a recent publication terms "a learning strategy for mastery." See Benjamin S. Bloom and others, Handbook on Formative and Summative Evaluation of Student Learning (New York: McGraw-Hill Book Company, 1971), p. 45.

Carroll defines the *learning task* as ". . . that of going from ignorance of some specified task or concept to knowledge or understanding of it, or of proceeding from incapability of performing some specified act to capability of performing it. . .."

Essentially his model is designed to meet individual differences. His ". . . model says that the learner will succeed in learning a given task to the extent that he spends the amount of *time* [italics added] that he *needs* to learn the task." The theory is that, given a sufficient amount of time and high-quality instruction of a kind appropriate to each student, as the Handbook cited above (p. 45) puts it, ". . . the majority of students may be expected to achieve mastery. . ." of most learning tasks that schools can appropriately set before them. "And the relationship between aptitude and achievement would approach zero."

Carroll asserts that (given clear objectives, "learner perseverance," and high "quality of instruction") schools have too often failed to provide ". . . opportunity--time . . . for learning, . . ." and he presents this hypothesis: ". . . the degree of learning, other things being equal, is a simple function of the amount of time during which the pupil engages actively in learning."

II-6 Cox, C. Benjamin. "Behavior as Objective in Education," Social Education, XXXV (May, 1971), 435-449.

An invitational article prepared to present a comprehensive discussion of behavioral objectives. While written for social studies "practitioners," it is addressed as well to educators in general.

Discusses behavioral objectives under the following four headings:

I. Sources of Educational Objectives
II. The Nature of Behavioral Objectives
III. Uses for Behavioral Objectives
IV. Kinds of Behavioral Objectives

Having presented ". . . the description, uses, and kinds of behavioral objectives . . ." and ". . . arguments for and against behavioral objectives . . . ," leaves it to the teacher to decide whether or not to use such objectives in his classroom.

Includes footnotes covering a wide range of articles and publications relating to behavioral objectives.

II-7 Dart, G. E. "A Look at 'Verifiable Performance Objectives'," Educational Leadership, XXVIII (April, 1971), 726-729.

Here is a plea by an administrator in a school district that is in the process of having all its teachers prepare "verifiable performance objectives" in connection with the proposed development of a "planning, programming, budgeting" system. He is concerned over the fact that, even though the objectives may be written in technically correct and complete form, they may not fit the children with whom they are to be used. He says:

> . . . we are learning to make up performance objectives for people whose names we do not know. Not only do we not know their names, we do not know whether or not they will want to accomplish what we want them to accomplish--or whether they will need to. It is possible that for a good many children there will be other school tasks more important than those necessary to accomplish the performance objectives. How do we know until we know the individual human beings?

He develops his points by tracing the social and physical-skill development of an elementary school child by the name of Kathy.

He is fearful that teachers and the schools will be judged too narrowly on the basis of test scores alone and expresses the hope that:

> . . . the lists we are now learning to compile will give way to lists of things that are really important for those pupils who individually need different things because each one of them is a unique human being. I hope our future lists will be largely those which are derived from what children, in one way or another, tell us they need to have a better life, now and in the future.

> I hope our present exercise sharpens our skill but that the skill is used in the context in which every performer of the verifiable performance objective has a name, a name that each of us knows.

II-8 Dickinson, Marie B. "Review of On Writing Behavioral Objectives for English," Research in the Teaching of English, V (Spring, 1971), 89-115.

After an introductory statement about English and the English curriculum and its transformation, the reviewer makes this statement:

> Pressures arising from outside the profession now push English teachers toward writing behavioral objectives in an effort to align student achievement with cost accounting. All other areas of the curriculum are similarly involved. The attempt is to establish performance criteria as the basis of the entire educational system.

She then says, "Many teachers foresee that the writing of behavioral objectives for English may be destructive." She then raises a series of questions for teachers of English to consider as they view the objective-writing movement. She expresses the hope that English teachers can avoid some, if not all, of the pitfalls implied in questions she has formulated. Her statement follows:

> The approach to accountability through behavioral objectives could result in overkill. The situation becomes more hopeful when leaders in the profession *intervene* [italics added] to help English teachers preserve that margin of autonomy that is needed to continue to work with the insight that English, in all its aspects, is unique human behavior, not primarily a school subject in the same sense as are the information and conceptual structures in some other disciplines.

With specific reference to the publication being reviewed, she states that "the National Council [of Teachers of English] displayed a wide array of perspectives for the consideration of English teachers and curriculum planners. She points up the need for *caution* by saying, ". . . the document alerts teachers of English to the fact that the data are not all in concerning the writing of behavorial objectives." She feels that "this publication may help to keep perspectives open and alternatives open."

The monograph's (see II-25) first part consists of a narrative which, to use Dickinson's words, "mirrors the struggles of a secondary teaching staff after they receive the charge from their administrator to begin to apply to the instructional process some of the modes used in industry and the military for planning and laying

out objectives and assessing achievements." She identifies a series of issues brought to the surface by this narrative and concludes that the "*image*" of the English teacher that it presents "is certain to be unsatisfactory to many."

After a "digression" to consider "technology as a tool" and its impact on "education and other institutions," she procedes to summarize and discuss at some length each of the 11 position papers which comprise Part II of the publication.

The concluding section of the review is devoted to an extensively footnoted discussion of "Divergent Concepts of Instruction." Her final sentence is:

> What appears to be needed for the 'seventies' is educational leadership above the level of cost-accounting and PERT /Program Evaluation and Review Technique/ charts.

II-9 Ebel, Robert L. "Behavioral Objectives: A Close Look," Phi Delta Kappan, LII (November, 1970), 171-173.

In this article, Ebel (a critic of the wholesale use of behavioral objectives) speaks with considerable approval of the fact that ". . . few teachers . . . have statements of behavioral objectives . . . and build their teaching efforts around them."

He reviews briefly the trend that has resulted in the use of behavioral objectives being a "now" thing.

He discusses "Justifications for Behavioral Objectives," "Problems with Behavioral Objectives," and "Some Limitations of Stated Objectives."

He concludes by stating that it is important for teachers to have the "right purposes" and that ". . . objectives are important." However, he does not believe that statements of purposes and objectives need to ". . . be in behavioral terms."

His concluding two sentences are:

> The great majority of teachers at all levels who feel no urgent need to write out their objectives in detail, and in terms of behavior, are probably wiser on this matter than those who have exhorted them to change their ways. Too much of the current reverence for behavioral objectives is a consequence of not looking closely enough at their limitations.

II-10 _____. "Criterion-referenced Measurements: Limitations," School Review, LXXIX, (February, 1971), 282-288.

An assertion ". . . that the idea of criterion-referenced measurement is not new, that recent emphasis on norm-referenced measurements has not been misplaced, and that good criterion-referenced measures may be practically unobtainable in many important areas of educational achievement."

Does not deny the value of "criterion-referenced" measurements, but cites and discusses what he regards as their limitations.

Supports his emphasis on history's repeating itself by the following statement:

> More than forty years ago Prof. H. C. Morrison, at the University of Chicago, developed and popularized a method of teaching based on the mastery of 'adaptations' of understanding, appreciation, or ability. These, unlike skills, seemed to him not to be matters of degree. 'The pupil has either attained it or he has not.' To achieve such an adaptation the instructor should organize his materials into units, each focused on a particular adaptation. He should then follow a systematic teaching routine: pretest, teach, test, reteach, retest, to the point of actual mastery.

Refers to Morrison's concept of "mastery" and notes that this concept has been brought into the picture again by the current emphasis on "criterion-referenced" measurements.

> Recently the concept of mastery has been reintroduced into educational discussions as a corollary of various systems of individually prescribed instruction and as a solution to the problem of individual differences in learning ability. Several authorities have pointed out, quite correctly, that these differences can be expressed either in terms of how much a student can learn in a set time or in terms of how long it takes him to learn a set amount. Why, they ask, should we not let time be the variable instead of amount learned? [See II-5 and III-2.]

Asks ". . . why we should expect or require a student of a subject to achieve the same level of mastery as every other student of that subject."

II-11 Eisner, Elliot W. "Educational Objectives: Help or Hindrance?," The School Review, LXXV (Autumn, 1967), 250-260. (Note: This article is followed by a series of comments by Robert L. Ebel, J. Thomas Hastings, and Arlene Payne with a final response by Eisner /pp. 261-282/.)

The School Review states that its purpose ". . . is to encourage reflection and discussion by all persons who are interested in or concerned about education." This article by Eisner and the accompanying discussions about it illustrate this purpose. Eisner raises what the editor of the publication regarded as "interesting and provocative issues." Accordingly, with the author's permission it was ". . . submitted . . . to a number of workers in the field of curriculum and testing." It was done because ". . . dialogue of this sort opens issues wider than can a single paper and yet achieves greater depth and coherence than does a group of independent papers on a given topic." In a sense, one has here the article plus evaluative reviews of it. Finally, the original writer has the *last round*. The result is sort of *intellectual feast* for the reader.

Basically, Eisner seeks to "tone down" what he feels may be a current over emphasis on the statement-in-advance approach to educational objectives. He contends that valid objectives are discovered during the learning journey in a sort of serendipitous fashion and that a rigidly followed pursuit of a stated performance objective may make the teacher insensitive to those that appear along the way.

He develops his thesis in the light of a sketch of the historical backgrounds relating to curriculum theory, and brings matters down to date with a brief documentation of this statement: "By the late forties and during the fifties, curriculum specialists again began to remind us of the importance of *specific educational objectives* /italics added/ and began to lay down guidelines for their formulation." He then makes his position quite clear by the following comments:

> Many able people for many years have spent a great deal of time and effort in identifying methods and providing prescriptions for the formulation of educational objectives, so much so that the statement 'Educational objectives should be stated in behavioral terms' has been elevated--or lowered--to almost slogan status in curriculum circles. Yet, despite these efforts, teachers seem not to take educational objectives seriously--at least as they are prescribed from above. And when teachers plan curriculum guides, their efforts first to identify overall educational aims, then specify school objectives, then identify educational objectives for specific subject matters, appear to be more like exercises to be gone through than serious efforts to build tools for curriculum planning. If educational objectives were really

> useful tools, teachers, I submit, would use them. If they do not, perhaps it is not because there is something wrong with the teachers but because there might be something wrong with the theory.

He goes on in the development of his article to state and develop at length what he regards as ". . . several limitations to theory in curriculum regarding the functions of educational objectives are to perform."

The varying degrees of agreement and disagreement appearing in the associated comments written, respectively, by Ebel, Hastings, and Payne, plus Eisner's, "A Response to my Critics," should give the teacher some of the needed perspectives from which to approach the preparation and use of educational performance objectives.

II-12 Engman, Bill D. "Behavioral Objectives: Key to Planning," The Science Teacher, XXXV (October, 1968), 86-87.

"The desirability of stating objectives in behavioral terms is hardly debatable.

. . . . . .

"Regardless of how well a teacher writes statements for satisfying the criteria of a behavioral objective, unless he understands the relationship of the objectives to what follows in the other phases, his teaching may well remain ineffective."

The writer of this article presents a four-phase model for "operationalizing" behavioral objectives.

II-13 Finder, Morris. "Review of On Writing Behavioral Objectives for English," Elementary English, XLVIII (May, 1971), 510-515.

The reviewer uses as his takeoff step the statement that there exists "the widely held assumption that schools exist to help children acquire certain kinds of learning or behavior, of which thinking, feeling, and acting are the typical kinds. The learning sought, therefore, must be the objective of instruction. Because learning is usually defined as a change in the behavior of people, the goals or objectives of teaching are often called 'behavioral'." He adds that teachers often are so concerned with means ("things for students to do") that they lose sight of the ends ("desired learning"). After saying that there is disagreement within the profession, he states, ". . . this disagreement or 'behavioral objectives issue' was the subject of a conference sponsored by the Commission on the English Curriculum of the NCTE [National Council of Teachers of English] held in Washington just before the 1969 Annual Meeting."

He refers to the book under review as resulting from this conference and cites the resolution passed at the meeting "that 'urges caution' in the use of behavioral objectives." After commenting on this resolution, he describes the book as consisting of two parts. Part I is ". . . a description through fictional narrative of arguments for and against the formulation of objectives for English . . . [providing] in elementary fashion a background for those new to the topic." "Part II consists of eleven papers and a bibliography . . .. The papers restate in various contexts the arguments described in Part I."

Finder confines his review to a brief summary and discussion of each of the eleven papers, and completes his analyses by saying,

> Objectives, though too often disregarded, misconceived, and misused, remain permanently as the first principle of teaching. The topic of the book under review, therefore, is of first importance. As a whole the book presents a range of opinion which provides materials for stimulating the kind of discussion that can help the profession clarify its most important single problem.

II-14 Frost, Joe L. "Analyzing Early Childhood Education Programs: A. The Nature of Educational Objectives," Educational Leadership, XXVIII (May, 1971), 796-801.

If, says the author, the goal of an early childhood program is *custodial*, educational objectives do not come into the picture. When the goal is *educational*, programs range from the socially-oriented type at one extreme to the academically-oriented type at the other. Programs with *social* ends do not typically have as precisely-stated goals as do those with *cognitive* ends. The former ". . . are not as amenable to precise definition as are the . . ." latter.

This article, illustrated by three charts, states that "arguments for and against behavioral objectives are accumulating," and cites some sources of such expressions. Then it proceeds to set out a case for the use of a "process-content-product focus." Each of these words is defined and the reader is cautioned not ". . . to confuse objectives (ends) with procedures (means) . . ." although both are important and inextricably interrelated.

The final, summary paragraph reads as follows:

> The product-oriented program emphasizes observable outcomes. In contemporary programs, outcomes are defined in terms of behavioral change. Behaviorally stated objectives are specified in advance of teaching. The act of teaching is viewed as hypothesis testing (X teaching should produce Y behavior), and

the success of the selected methodology (hypothesis) is judged by the child's performance on a given task. Emphasis upon product (getting to the desired end as soon as possible) is more consistent with the behavioral-environmental view of learning and development than with the other views described.

II-15 Gideonse, Hendrik D. "Behavioral Objectives: Continuing the Dialogue," The Science Teacher, XXXVI (January, 1969), 51-54.

This article was written for the purpose of discussing further the issues raised in an earlier presentation by J. Myron Atkin of cautions in the use of behavioral objectives. (See II-2.)

The author says that he ". . . would like to try to contribute positively to the dialogue and move it a little further along." He presents four questions and develops his article by discussing each one. The questions read as follows:

1. *What should we mean by behavioral objectives?*

2. *What criteria (or whose) should we employ in our attempt to better the practices, processes, materials, and organizational forms by which we carry out instruction and education? Which should we think about before we begin, which should we think about as we proceed, and which should we apply after we have completed an effort? Whose criteria of 'better' do we accept?*

3. *Do we know enough (not everything, now, but enough) about learning, cognitive development, motivation, and so on to build instructional systems of greater effectiveness than the ones we currently use in our schools?*

4. *What conclusions, if any, should we draw from the fact that the kind of curriculum building which Atkin describes in his article (including the kind which the engineers, as Atkin calls them, are interested in doing) costs millions of dollars? How should we ask for results? How do we determine accountability? How do we judge whom and what to support?*

II-16 Guth, Hans P. "The Monkey on the Bicycle: Behavioral Objectives and the Teaching of English," English Journal, LIX (September, 1970), 785-792.

A cleverly and humorously delivered address before a convention of the National Council of Teachers of English objecting to what

he considers to be inadequacies in the use of behavioral objectives in the teaching of English.

Note: See article in The English Journal for April, 1971, by Peter W. Airasian which was prompted by Guth's reservations relating to the use of behavioral objectives.

II-17 Haberman, Martin. "Behavioral Objectives: Bandwagon or Breakthrough," Journal of Teacher Education, XIX (Spring, 1968), 91-94.

Defines the "*behavioral objective approach*," lists its "*benefits*" and "*limitations*, and concludes that, while the limitations cannot be ignored, this approach promises to be the major vehicle for revising curriculum in the future.

II-18 Hersh, Richard H. and Stuart J. Cohen. "A Case against a Case against Behavioral Objectives," The Elementary School Journal, LXXI (May, 1971), 430-437.

Like the article to which this is a reply, a quotation from the opening lines of the article gives an indication as to what the reader may expect. They read as follows:

> There has been a rash of articles trying to convince educators that behavioral objectives should be buried. Typical of these funeral orations is the article entitled, 'A Case against Behavioral Objectives,' by James Macdonald and Bernice J. Wolfson, in *The Elementary School Journal*, for December, 1970.
>
> Obviously, the critics as well as the proponents of behavioral objectives are interested in the evaluation and the improvement of instruction. The question to be explored by both sides is, 'Can the use of behavioral objectives aid in the evaluation and the improvement of instruction?' In answering this question let us state some basic assumptions:

Note: See also II-23.

II-19 Jenkins, Joseph R. and Stanley L. Deno. "On the Critical Components of Instructional Objectives," Psychology in the Schools, V (October, 1968), 296-302.

In this article, the authors do two things. First, on the basis of their study of writings related thereto, they offer a ". . . formal description of an instructional objective . . . ," and, second, they identify, discuss, and illustrate "the critical components of an objective . . .."

They conclude by saying that their article is intended neither as a defense of nor an attack upon the use of behavioral objectives. They do point out, however, that persons are likely to agree that "as an objective becomes more specific and 'behavioral' it becomes less inclusive. This increased specificity . . . produces objectives which may seem superficial or educationally trivial."

II-20 Kirkton, Carole M. "A Reference Shelf for Curriculum Planning, Part III: Behavioral Objectives," English Journal, LX (January, 1971), 142-150.

"No one likes to be told where to go. But most of us like to know where we are going. Behavioral objectives have to do with destinations--the outcomes of learning, the goals of teaching. And the current controversy about the touted merits and the alleged evils of writing behavioral objectives revolves around the nature of the destinations of the educational process and the alternative roads open to those destinations."

The above paragraph is the opening one in a summary of sources relating to behavioral objectives in general, and to English in particular. The writer indicates where each item summarized can be secured. The items summarized have been identified by the Clearing House on the Teaching of English, which is the information service of the National Council of Teachers of English (NCTE), in cooperation with the U. S. Office of Education's Educational Resources Information Center (ERIC). Most of them are available from EDRS (the ERIC Document Reproduction Service).

In addition to the information given in this summary, the writer presents a review of the controversy surrounding the use of behavioral objectives and summarizes many of the sources about which information is given. The following paragraph is an example of those used by this writer in analyzing the nature of behavioral objectives:

> Behavioral objectives are statements of desired student behavior which specifically identify and describe in observable, measurable terms what is to be accomplished. Often these objectives describe things that a student should be able to do as a result of having studied a particular unit or course--things that he couldn't do before or that he should be able to do better than he did before.

II-21 Koepke, Charles A., III. "Reply to Atkin on Behavioral Objectives," The Science Teacher, XXXV (November, 1968), 12,14.

Somewhat in the format of the famous "Webster's Reply to Hayne," Koepke's "Reply to Atkin on Behavioral Objectives," first compliments

Atkin on his "intellectual and academic sensitivity", and then states that while he cannot "agree with many of his conclusions, it is certainly refreshing to be able to enter into a dialogue with someone who finally concurs that behavioral objectives can at least make a contribution to the evolutionary state-of-the-art in education." Note: See Myron J. Atkin, "Behavioral Objectives in Curriculum Design: A Cautionary Note," The Science Teacher, XXXV (May, 1968), 27-30. (See II-2.)

In six numbered statements, Koepke spells out his degree of agreement and disagreement with the points of concern raised by Atkin.

He concludes by sharing Atkin's "worry" about the "worth of our educational goals." He states that this concern ". . . must also be applied to everything that we have been crudely passing off as education over the past several decades."

II-22 Macdonald, James B. "Myths About Instruction," Educational Leadership, XXII (May, 1965), 571-576, 609, 611, 613-617.

It might assist the reader if he would substitute the word *theory* for *myth* in the title and throughout this article. This statement is made because it appears that the author actually identifies and discusses the limitations of theories on which it has been advocated that we "prescribe instructional practices." He says that, with respect to each of these myths (theories), "We . . . prescribe instructional practices on the basis of *possibility* but *unknown probability of validity*, and the motives or moving forces for prescription are probably not central to the nature of instruction itself." [Italics added.]

The following paragraph [italics added] (with two additional myths or theories added later) forms the outline of the article:

> I should like to discuss six prevalent myths of instruction to illustrate my points. When I speak of instruction I mean the actual classroom interaction of pupils, teachers and materials. The myths are more or less probable in their truth value yet all are still more clearly in the realm of possibility only. All these myths also have other 'non-instructional' motivating forces of considerable import, and all are being offered as a prescription for instruction. These myths are: the myth of *learning theory*, the myth of *human development*, the myth of the *structure of the disciplines*, the myth of *modes of inquiry*, the *interaction analysis* myth, and the myth of *rational decision making or technical efficiency*.

Each myth (theory) is explicated in turn and its limitations as a basis for prescribing instructional practices--from the author's point of view--are pointed out. The last of the six relates most directly to the "behavior objectives" approach to the prescription of educational practices. Since this bibliography is focused on this area, Macdonald's analysis of this sixth myth (theory) is of special interest. He states [italics added]:

> This rationale is an impressive one. From an aesthetic viewpoint, it could be called beautiful. Further, the use of this rationale is an inherently efficient operation, providing one accepts the necessary premises. *First select our objectives; then select an activity from among a number of alternatives; next fit this activity (called learning experience) into a scope and sequence pattern, then evaluate the outcome.*

In common with Elliot W. Eisner (see II-11), he appears to believe that at least not all educational objectives need to be expressed *before* instructional activities are carried on. Robert L. Ebel (see II-11, "Comments" on Eisner's article) also says, "attempts to state them [objectives] *explicitly in advance of teaching* [italics added] seldom will be educationally rewarding."

With respect to objectives, he writes [italics added]:

> Let us look . . . at the problem of objectives. Objectives are viewed as directives in the rational approach. They are identified *prior* to the instruction or action and used to provide a basis for a *screen* for appropriate activities.
>
> There is another view, however, ... This view would state that *our objectives are only known to us in any complete sense after the completion of our act of instruction.* No matter what we thought we were attempting to do, we can only know what we wanted to accomplish after the fact. Objectives by this rationale are *heuristic devices* which provide *initiating sequences* which become *altered* in the flow of instruction.
>
> In the final analysis, it could be argued, the teacher in actuality asks a fundamentally different question from *'What am I trying to accomplish?'* The teacher asks, *'What am I going to do?'* and out of the *doing* comes *accomplishment.*

After expressing his convictions about the limitations of each of the six myths (theories) listed at the outset of this article, Macdonald refers to and develops two additional "possibilities" that have been suggested: the *"aesthetic"* and the *"moral."* He

says that ". . . each of these . . . has as much reasonable possibility of providing prescriptions for instruction as any of the previous ones mentioned, and their probability of being valid might even be greater." He feels, however, that the "climate of our times" is such that: "The humanities are considered court jesters without serious purpose."

Near the end of his article he explains why he uses the word myth. The six that he has listed ". . . are myths by definition *here* because they are used to prescribe patterns for instruction--when in reality they are only *possible* /italics added/ ways of viewing, with *uncertain probabilities of validity* /italics added/."

He appears to recognize possible although uncertain validity in "prescribed patterns for instruction" based on presently identified myths (theories), but he does not want us to go overboard in our adherence to them to the extent that we may fail to ". . . feel free to create /others/ which may have even better probabilities of being valid."

II-23 Macdonald, James B. and Bernice J. Wolfson, "A Case Against Behavioral Objectives," The Elementary School Journal, LXXI (December, 1970), 119-128.

The opening lines of this article constitute the best indication of its contents. They read as follows:

> The expanding effort to train teachers to use the behavioral objectives model has caused us to probe more deeply our reasons for objecting to this way of conceptualizing the process of teaching and learning.
>
> Our argument revolves around four questions:

Note: See also II-18.

II-24 McNeil, John D. "Antidote to a School Scandal," Educational Forum, XXXI (November, 1966), 69-77.

The author of this article suggests a method for a "school system's programs of teacher evaluation." He calls it "Supervision by Objectives" and defines it as follows:

> Briefly, Supervision by Objectives is a process by which a supervisor and a teacher agree in advance as to what they will accept as evidence that the teacher has or has not been successful in changing the behavior of his students. An agreement is drawn up before the teacher acts and is designed to counter the prevailing practice of

> trying to make an *ex post facto* judgment of ends. The contract is tentative to the extent that at any time the two parties can renegotiate. For example, the original target is modified if the teacher finds during the course of instruction that he has overestimated the changes possible, or if he subsequently determines more important changes for his students. This will happen frequently, and the supervisor has to agree that the modification is warranted and to accept the alternate criterion measures.

The *primary* emphasis (in the author's view) is thus placed on outcomes rather than on the teacher's qualities (appearance, voice, exemplary community conduct); procedures followed in the classroom (". . . whether children raise their hands or not before speaking; whether seats are in one direction; whether the teacher talks most, all, or some of the time."); and room conditions (the evenness with which the blinds are drawn). Instead, teacher and supervisor cooperatively consider teacher characteristics and behaviors (in and without the classroom) only as they appear to have a clear relationship to results in desired student learnings. He says,

> In a sense, judging the teacher *independently* [italics added] from the consequences sought and attained is like judging the ball player on his form rather than observing where the ball goes. More than that, we sometimes judge performance of the teacher without first finding out what game he is playing. If there is agreement initially by the supervisor and the teacher upon the desired ends of instruction--whether they be with respect to subject-matter attainments, changed attitudes towards civic problems, or personal problems met--then the teacher has a chance to succeed and an opportunity to profit from supervisory assistance when the objectives are not being met.

The article develops--frequently with vivid examples--the procedures which could be used to apply his point of view in practical school situations, and describes a form which can be used "for rating and observing a teacher" on the basis of *facts*, and for use by the supervisor *and* teacher as they ". . . contrast intended outcomes with evidence of actual outcomes." On this basis, he contends, improved planning will result. Such an approach ought to ". . . reveal more appropriate objectives on ways to vary practice."

On balance, the author develops his thesis not as a device to rate teachers, per se, but as a strategy for helping teachers to get improved results.

II-25 Maxwell, John and Anthony Tovatt, editors. On Writing Behavioral Objectives for English. Champaign, Illinois: Commission on the English Curriculum, National Council of Teachers of English, 1970. Pp. x + 136. Paper. $2.50.

This monograph is the result of a conference of the Commission on the English Curriculum of the National Council of Teachers of English held in 1969 "to examine the influence of a widespread and growing movement called, loosely, 'behavioral objectives' which had begun sweeping through schools and some colleges, and to examine this movement as it applied to instruction in English." In the "Foreword," the resolution adopted by NCTE is quoted. It is entitled, "On the Need for Caution in the Use of Behavioral Objectives in the Teaching of English."

The book has two parts. Part I presents in narrative form the manner in which, through a workshop for teachers in service, they might be prepared to redefine "English in a framework of behavioral objectives." Part II consists of 11 *position papers* on behavioral objectives. The publication is concluded with a six-page bibliography on behavioral objectives including entries which "are either immediately pertinent or applicable thereto; . . .."

Reviews of interest are: (See II-8 and II-13.)

Dickinson, Marie B. "Review of On Writing Behavioral Objectives for English," Research in the Teaching of English, V (Spring, 1971), 89-115.

Finder, Morris. "Review of On Writing Behavioral Objectives for English," Elementary English, XLVIII (May, 1971), 510-515.

II-26 Mitzel, Harold. "The Impending Instruction Revolution," Phi Delta Kappan, LI (April, 1970), 434-439.

This article develops the ". . . thesis that the last three decades of the twentieth century will witness a drastic change in the business of providing instruction in schools and colleges."

The author says that the role of the teacher will be changed from that of a "'stand-up' lecturer" to that of "instructional programmer." He says that we will stop describing learning in terms of the *activity* of the student and will begin to regard it as ". . . a way of characterizing change in the student's behavior in some desired direction between two definite time markers." He says that ". . . instruction is the general term for the process and learning is the product."

Major sections of the article are entitled "Individualized Instruction," "Adaptive Education," "Evaluation and Student Appraisal," and "Increasing Heterogeneity."

He believes that the changes which he predicts will operate at all levels of education, and in common with an increasing number of educational theorists and practitioners, he subscribes to the use of behavioral objectives. With regard to evaluation, he states that "an achievement mastery criterion" should exist for each objective. In this connection, he says:

> If . . . 50 percent of the students get 50 percent of the items wrong, then either we are asking the wrong questions or there is something seriously wrong with our non-adaptive instructional program.

He refers to this concept as "mastery-type student evaluation."

Twenty-five references are cited for use by anyone who wishes to read more broadly about "the impending instruction revolution."

II-27 Montague, Earl J. and David P. Butts. "Behavioral Objectives," The Science Teacher, XXXV (March, 1968), 33-35.

"Behavioral objectives. This term, much heard these days, enjoys more popularity than understanding." After this opening and a brief discussion, Montague and Butts offer their definition:

> *A behavioral objective is a goal for, or a desired outcome of, learning which is expressed in terms of observable behavior (or performance, if you prefer) of the learner.*

They make a plea for the statement of objectives in a form that is sufficiently precise that they "provide direction to both the learning experience and the appraisal of the effectiveness of a specific experience--the evaluation."

They offer specific guidance (with illustrations) in the writing of behavioral objectives and say,

> The process generally follows a pattern consisting of three considerations: (1) the behavior desired, (2) a description of the situation in which the behavior is to be observed, and (3) the extent to which the student should exhibit the behavior.

A section discusses the question: "Does the use of behavioral objectives limit the outcomes of learning?" Finally, an admonition to consider objectives in the affective as well as the cognitive domain is given.

II-28 Montague, Earl J. and John J. Koran, Jr. "Behavioral Objectives and Instructional Design: An Elaboration," The Science Teacher, XXXVI (March, 1969), 10, 77-78.

This article will be best understood if read in conjunction with at least two others--Earl J. Montague and David P. Butts, "Behavioral Objectives," The Science Teacher, XXXV (March, 1968), 33-35, and Myron J. Atkin, "Behavioral Objectives in Curriculum Design," The Science Teacher, XXXV (May, 1969), 27-30. (See II-27 and II-2.)

The authors refer to the fact that Atkin has ". . . questioned the utility and efficacy of using behavioral objectives." They repeat the definition of *behavioral objective* given in the article of March, 1968, and list four functions that may be served by the use of behavioral objectives. They state ". . . that the technology of formulating behavioral objectives is only the initial step in a much more complex sequence."

They say that they ". . . do not share all of Atkin's reservations concerning the use of behaviorally stated objectives in curriculum design and instruction." They concede that it is not possible to ". . . identify *all* the educational outcomes for any curriculum." But they do not accept this fact as ". . . a cogent argument against the statement of behavioral objectives prior to the development of a design for instruction." Feedback from the identification of "unplanned-for outcomes" can be used by the teacher, they say, "to redesign lessons based on this feedback."

They advise everyone in the "education community" to recognize that educational objectives vary widely in "worth," regardless of the technical adequacy with which they are stated.

II-29 Popham, W. James. "The Instructional Objectives Exchange: New Support for Criterion-Referenced Instruction," Phi Delta Kappan, LII (November, 1970), 174-175.

"The quality of any instructional sequence must be evaluated primarily in terms of its ability to promote desirable changes in the intended learner.

. . . . . .

"Perhaps the type of instructional strategy being advocated these days can best be described as *criterion-referenced instruction*. This approach focuses on the degree to which the learner can perform specified criterion behaviors.

". . . a primary feature of criterion-referenced instruction is a preoccupation with the results of instruction, not the procedures used to promote them."

These quoted excerpts from this article by a leading exponent of the use of *behavioral objectives* and corresponding criterion-referenced mastery testing are followed by a description of a bank upon which busy teachers may draw when they need already-prepared objectives and accompanying test items in various subject fields. He tells how the non-profit bank was established, how it operates, and gives the address: Instructional Objectives Exchange, Box 24095, Los Angeles, California 90024. Note: A request will bring free information about the Exchange and a catalog of available objectives and corresponding test items.

II-30 _____. "Practical Ways of Improving Curriculum Via Measurable Objectives," Bulletin of the National Association of Secondary School Principals, LV (May, 1971), 76-90.

"Measurable instructional objectives are designed to counteract what is to me the most serious deficit in American education today, namely, a preoccupation with *process* [italics added] without assessment of the consequences." This is the opening sentence of an edited, oral presentation by the author at the 1971 convention of the National Association of Secondary School Principals. A brief editor's annotation reads as follows:

> Mr. Popham is a persuasive proponent of the use of precise measurable objectives to improve curriculum, instruction, and evaluation. In the sixties there was a coalescing of advocacy for measurable objectives but little implementation. He believes that the coming decade will yield important dividends.

This quite lengthy presentation is an informal review of Popham's contributions to the "objectives movement" which are developed more fully in his other publications cited in this bibliography.

He says that the teacher exists "to modify human beings." Consequently, the best way for a principal, and for that matter the teacher also, to know "whether the teacher is functioning effectively in the classroom" is to determine the extent to which defensible objectives are being achieved.

Because he feels that teachers are too busy to write all of their own objectives, he has established the Instructional Objectives Exchange, Box 24095, Los Angeles, California 90024. Included are measures for the objectives. "Objectives without measures," he says, "are somewhat akin to revolvers without bullets."

As he has sought to do more extensively elsewhere in his more formal published materials, he concludes his presentation to the principals by giving a brief answer to the frequently-asked question: "Are behavioral goals dehumanizing?"

II-31 Purves, Alan C. "Of Behaviors, Objectives, and English," English Journal, LIX (September, 1970), 793-797.

The author of this article opens by saying, "Behavioral objectives have recently become the object of heated controversy, ..." He states, however, that it is not his purpose to enter into the argument, but ". . . rather to make some comments on the purposes and logic of writing behavioral objectives."

He says, "Teachers want to change behavior; otherwise they would not teach." After making it clear that he does not confuse "behaviors" with "behaviorism," he says, "'Behavioral objectives' deal in input, process, and output, in conditions and observable behaviors, and in criteria."

In anecdotal fashion, he points out some of the advantages and pitfalls in the writing of behavioral objectives in English as compared with various other subject areas. He concludes by saying that there are no reasons why a teacher should not write behavioral objectives in English but that such a teacher should "remember two warnings":

(1) Don't think that writing behavioral objectives is going to help create lesson plans and unit outlines.

(2) Don't write objectives towards any end other than intellectual and emotional mastery of the mother tongue.

II-32 Raths, James D. "Teaching Without Specific Objectives," Educational Leadership, XXVIII (April, 1971), 714-720.

A demurrer and a caveat relating to the mechanical and uncritical use of specific objectives and an argument that "an activity can be justified in terms other than those associated with its instrumental value for changing the behavior of students."

In a section headed "Criteria for Worthwhile Activities," this question is asked: "If we accept the argument that the major focus of our schools should be away from activities designed to bring about specific behavioral changes in students, then on what basis can activities be justified for inclusion in the curricula of our schools?" In answer, 12 "*value statements*" are suggested as a basis for determining when "one activity is more worthwhile than another."

Two approaches to evaluation of school programs are suggested. One would use criterion-referenced achievement tests to evaluate those activities followed in order to achieve stated objectives. The other would be "to describe school programs in terms of the characteristics of the activities which comprise the programs."

II-33 Shulman, Lee S. "Psychological Controversies in the Teaching of Science and Mathematics," The Science Teacher, XXV (September, 1968), 34-38, 89-90.

This article deals with the controversy which ". . . seems to center essentially about the question of how much and what kind of guidance ought to be provided to students in the learning situation." At one end of the continuum is the *discovery* approach; at the other lies the *guided learning* approach. He cites Jerome S. Bruner (The Process of Education) and Robert M. Gagné (The Conditions of Learning) as being exponents, respectively, of these two points of view. (See III-3 and III-7.)

He gives concrete examples of learning situations typical of each approach and analyzes them from the standpoint of each extreme. He devotes the last part of his discussion to the question: "Need we eternally code these two alternatives--discovery versus expository teaching--or, can we, without being heretical, manage to keep both of these in our methodological repertories . . . ?" He introduces this part of his article by the heading: "Synthesis or Selection." After pointing out situations in which one type of experience or the other appears to be more appropriate, he re-phrases his question as follows:

> Under what conditions are each of these instructional approaches, some sequence or combination of the two, [or] some synthesis of them, most likely to be appropriate?

He concludes by cautioning against the uncritical "bootlegging" of ideas from one subject field to another, and admonishes us to conduct ". . . empirical studies of how certain specific concepts are learned under certain specific conditions with certain specific kinds of pupils."

II-34 Tyler, Ralph W. "Testing for Accountability," Nation's Schools, LXXXVI (December, 1970), 37-39.

Points out the inadequacies of *norm-referenced* tests for measuring how much a student has learned in a specific area over a short period of time and describes *criterion-referenced* tests designed to show student performance in specific areas of learning.

Part Three: References Relating to the Classification of Educational Objectives and the Theories or Conditions of Learning

III-1 Bloom, Benjamin S. (editor), Max D. Englehart, Edward J. Furst, Walker H. Hill and David R. Krathwohl. Taxonomy of Educational Objectives (The Classification of Educational Goals) Handbook I: Cognitive Domain. New York: David McKay Company, Inc., 1956. Pp. xii + 207. Paper. $2.50.

Within the past 25 years there has been a developing trend toward the practice of stating the desired outcomes of education (educational objectives) in terms of measurable (observable) *student behaviors*. While *teacher behaviors* and *methods of instruction* have their proper role (and objectives do have implications for teacher and student procedures and activities), they are not explicatly stated in the description of an objective.

Handbook I is devoted to a taxonomy (classification) of educational objectives which fall into the *cognitive domain*. Three additional domains have been identified: *affective domain*, *psychomotor domain*, and *perceptual domain* (see III-11, III-16, and III-13).

The authors of Handbook I say, "The major purpose in constructing a taxonomy of educational objectives is to facilitate communication." The six "major clauses" proposed in the cognitive domain are:

1.00 Knowledge
2.00 Comprehension
3.00 Application
4.00 Analysis
5.00 Synthesis
6.00 Evaluation

Each of these major areas is broken down into its constituent elements and each one is defined and discussed in some detail. Sample descriptions of desired outcomes (behaviors) expected in certain *situations* are included. Illustrative testing procedures for use in detecting these outcomes are given.

III-2 Bloom, Benjamin S., J. Thomas Hastings, and George F. Madaus (writers and editors). Handbook on Formative and Summative Evaluation of Student Learning. New York: McGraw-Hill Book Company, 1971. Pp. xii + 923. $11.95.

Book titles (Gone With the Wind, for example) frequently are poor indicators of their contents. To assume that a book on "evaluation" would dwell exclusively on the judging of outcomes would be to misunderstand the current meanings being attached to this simple sounding

word. This massive publication deals with considerably more than merely narrowly conceived end-of-course evaluation. It looks at it in almost the broadest possible sense. The first paragraph of the preface makes the publication's broad scope quite clear:

> This is a book about the 'state of the art' of evaluating student learning. *It is intended primarily for present and future classroom teachers* [italics added]. Properly used evaluation should enable teachers to make marked improvements in their students' learning. It is the *improvement of student learning* [italics added] which is the central concern of this book.

Consistent with the statement that it is primarily a book for teachers, the authors express their predictions of its usefulness in this manner:

> . . . the entire book is a handbook, to be used in a variety of teaching contexts and learning contexts. It is our hope that students in teacher-training institutions will secure the book early in their student careers, that they will refer to it in the curriculum courses they take, that they will use it to provide illustrations and models for evaluation courses, that they will find it useful in their methods courses as they attempt to relate instructional and learning approaches to the feasible objectives of courses in their field, and that the evaluation procedures will help them become clearer about the meaning and significance of the objectives. As they do their practice teaching, they should find the book helpful in improving their evaluation practices. Finally, we hope they find this book so useful that they continue to use it during their teaching careers as they face choices of curriculum and instructional approaches, improvement of evaluation procedures, and the maintenance and development of a point of view about education, mastery learning, and evaluation.
>
> We believe that the skilled teacher may eventually go beyond the limits provided by this handbook--when this occurs, let us hope that it will no longer be needed or that new handbooks will be available. In the meantime, it is our hope that the full significance of what education can be is not lost in the details of translating tables of specifications into learning experiences and evaluation procedures. These are operations intended to enable more teachers to realize the seductive dream which drew them into education--the fullest educational development of their students.

It is expected also that curriculum specialists and test makers as well as teachers will find the book useful.

The first of this two-part volume consists of four sections with 12 chapters and an appendix.

Probably the best way to give the reader of this annotation a view of the contents of the first part of the Handbook is to quote quite extensively from the information given by the three "writers and editors" in their prefatory remarks. They say that Part 1 deals ". . . with the evaluation problems all teachers are likely to encounter." Then they summarize the contents of each of the four sections as follows:

> The first section, Education and Evaluation (Chapters 1 to 3), presents a point of view about education and educational objectives and describes in detail the ways in which evaluation may be used to help bring students up to mastery levels of learning.
>
> The second section, Using Evaluation for Instruction Decisions (Chapters 4 to 6), is intended to help teachers become aware of the different purposes of evaluation and the ways in which different types of evaluation instruments can be developed for use in the classroom. The teacher will find ways of improving the summative evaluation he now uses; and the discussions of diagnostic and formative evaluation are likely to present new and very different ways in which evaluation can be used to improve teaching and learning.
>
> The third section, Evaluation Techniques for Cognitive and Affective Objectives (Chapters 7 to 10), is organized around the Taxonomy of Educational Objectives (Bloom et al., 1956; Krathwohl et al, 1964); it presents models and techniques for constructing valid evaluation instruments for the different types of objectives found at all levels of education and in most subject fields.
>
> The fourth section, Evaluation Systems (Chapters 11 and 12), suggests some of the ways in which cooperation by teachers and specialists can reduce the work involved in evaluation and improve the effectiveness of evaluation in the school situation. This section also considers some of the major new developments taking place in evaluation.

The second part consists of separate chapters dealing with "evaluation in each of the [selected] major subject fields and levels of

education." Each chapter is written by a person who is a specialist in the field treated. The selected list covered follows:

Preschool Education
Language Arts
Secondary School Social Studies
Art Education
Science
Secondary School Mathematics
Literature
Writing (Not Handwriting)
Second Language
Industrial Education (Including Industrial Arts)

There are full chapters devoted to *educational objectives*, *formative evaluation*, and *summative evaluation*, and the concepts presented in them are amplified and applied throughout the Handbook. The chapter on "Learning for Mastery" develops and expands a "*basic set of ideas*" which challenges schools and teachers to "expand" rather than "reduce" students' opportunities for learning. It makes this key assertion calling for an almost complete reversal of traditional school and teacher attitudes toward learners--at least the so-called *slow ones*:

> Most students (perhaps more than 90 percent) can master what we have to teach them, and it is the task of instruction to find the means which will enable them to master the subject under consideration. A basic task is to determine what we mean by 'mastery of the subject' and to search for the methods and materials which will enable the largest proportion of our students to attain such mastery.
>
> . . . . . .
>
> . . . if the students are normally distributed with respect to aptitude but the kind and quality of instruction and the *amount of time* /italics added/ available for learning are made appropriate to the characteristics and needs of *each* student, the majority of students may be expected to achieve mastery of the subject. *And the relation between aptitude and achievement should approach zero* /italics added/. It is this basic set of ideas we wish to develop . . ..

The book is replete with charts, tables, and figures, and it lists numerous references for further study. It has a name index and a subject index.

III-3 Bruner, Jerome S. The Process of Education. Cambridge, Massachusetts: Harvard University Press, 1961. Pp. xx + 97. $2.75.

Thirty-five persons with Bruner as chairman held a conference in 1959 called by the National Academy of Sciences. It was devoted chiefly (but not wholly) to problems relating to curriculum and instruction in the sciences and mathematics in elementary and secondary schools. This book grew out of this conference. Full details are given in the author's preface.

While the book can be said to have grown out of the conference described above, it is not presented in a report format. Instead, it is a continuous text written by one man albeit sensitive to many reactions from a number of the conferees prior to publication. Although illustrations of learning activities involved in studying science and mathematics abound in the book, the author's generalizations have implications for the entire "process of education." No "distractors" or "amplifiers" in the form of footnotes appear in the book.

After having used the introductory chapter to build a broad background (which, incidentally, cites teachers as "the principal agents of instruction"), the author in the remaining five chapters concentrates ". . . on four themes and one conjecture: the themes of structure, readiness, intuition, and interest; the conjecture of how best to aid the teacher in the task of instruction."

In the chapter on "Readiness for Learning," the reader is challenged (by descriptions of learning situations) to recognize that children are often *ready* for learning long before teachers tend to think they are.

In Chapter 4, "Intuitive and Analytical Thinking," Bruner seeks to analyze the differences between the teaching approaches appropriate to each type. It is in this chapter that considerable emphasis is given to ". . . teaching various so-called heuristic /discovery/ procedures."

The chapter on "Motives for Learning" reviews most of the intrinsic and extrinsic approaches to motivation that are commonly used in schools. The final chapter, "Aids to Teaching," cautions against the complete substitution of *"devices for vicarious experience"* for direct involvement on the part of students. This point is underlined by the following quotation:

> A perpetual feast of the best teaching films in the world, unrelated to other techniques of teaching, could produce bench-bound passivity.

He goes on to say that ". . . the teacher constitutes the principal aid in the teaching process . . .." He summarizes the teacher's

role as being that of "communicator, model, and identification figure." Within this framework, he concludes: "There need be no conflict between the teacher and the aids to teaching." After referring to the availability of funds for the development of audio-visual aids, he makes the following concluding comment:

> The intelligent use of that money and of other resources now available will depend upon how well we are able to integrate the technique of the film maker or the program producer with the technique and wisdom of the skillful teacher.

Note: Bruner is generally regarded not as the "inventor" of, but as one of the best known advocates of, the *learning-by-discovery* point of view regarding student learning. See also Bruner's book, Toward a Theory of Instruction.

II-33 cites an article which reviews, analyzes, and compares the discovery learning idea and the guided learning approach. The book, The Conditions of Learning, by Robert M. Gagné (see III-7) presents the guided learning approach.

III-4 _____. Toward a Theory of Instruction. Cambridge, Massachusetts: Harvard University Press, 1966. Pp. xiv + 176. $3.95.

There is a tendency among educators to regard Bruner as a chief exponent of what is known as "learning by discovery." (See II-33 for an article which discusses the issues relating to the degree and kind of guidance students ought to be given in the "learning situation" and for a critical analysis of Bruner's position.)

This book is a collection of essays, developed and changed over a period of years, as the author was ". . . coping with the problems they undertake." He states that they are not "casual papers" because they were developed while he was personally engaged "in the practical tasks of public education." Because of the essay format, with the exception of the eighth and final chapter, each one can be profitably read without necessarily referring to any of the others. The seven essays (chapters) have the following titles:

1. Patterns of Growth
2. Education as Social Invention
3. Notes on a Theory of Instruction
4. Man: A Course of Study
5. Teaching a Native Language
6. The Will to Learn
7. On Coping and Defending

Chapter 3 opens with this sentence: "In this essay I shall attempt to develop a few simple theorums about the nature of instruction."

He does it by an illustration involving "the teaching and learning of mathematics." This illustration is widely regarded as one of the best examples of what is meant by the expression "learning through discovery." The following two sentences conclude this chapter:

> We teach a subject not to produce little living libraries on that subject, but rather to get a student to think mathematically for himself, to consider matters as an historian does, to take part in the process of knowledge-getting. *Knowing is a process, not a product* [Italics added].

The final chapter is a sort of author's summary of each of the essays included in the book. He states that, throughout, he has ". . . tried to explore the relation between . . . the course of intellectual development, . . . [and] pedagogy." In a sense, one might well say that the final chapter constitutes the author's review and summary of his own book. It does, however, add certain content.

III-5 Campbell, Robert E. and others. The Systems Approach: An Emerging Behavioral Model for Career Guidance (An Interim Report of a Procedural Monograph). Columbus, Ohio: The Center for Vocational and Technical Education, The Ohio State University, April, 1971. Pp. xii + 273. Write for availability.

This publication reports on the current status of a procedural model, based on a systems approach, "for improving career guidance programs in senior high schools." The model is purported to have applicability outside the guidance area. The writers say, "The basic model is not restricted to career guidance and has utility for other aspects of the educational system." Extensive field testing over the next two years will lead to a revision of it.

A review of "systems methodology" and its advantages is included and an overview of the "10-phase procedural model" is given. The terms *mission*, *goals*, and *behavioral objectives* are defined and the distinctions between them are explained because "each of these terms has special significance and must be differentiated."

In a section entitled, "Program Evaluation Strategies," the recent history of the emphasis on evaluation in education is given.

The procedural model--selected from among the five that are reviewed in the projected monograph--used in this project is the so-called Guba-Stufflebeam CIPP Evaluation Model. "CIPP is an acronym for the four steps of the evaluation process: 1) content [context] evaluation, 2) input evaluation, 3) process evaluation, 4) product

evaluation." A definition of each of the steps is included in text and diagramatic form. (See III-17 for the theoretical presentation of the CIPP model.)

An extensive bibliography (referred to as references) is included. In addition, there are five appendices giving, respectively, sample student behavioral objectives, an annotated bibliography of career guidance methods and techniques, an extensive supplementary reading list, a state-by-state summary of state education guidance services, a list of program resources for change, and a glossary of systems model terms.

III-6 French, Will and associates. Behavioral Goals of General Education in High School. New York: Russell Sage Foundation, 1957. Pp. 247. $5.50.

The current avalanche of published articles and books relating to educational behavioral or performance objectives--mostly with copyright dates less than ten years old--leads one almost to the point of regarding a publication in the area dated before 1960 as a classic.

The study reported by French and associates resulted from the work of three prestigious committees working under the auspices of the Educational Testing Service and the Russell Sage Foundation. It is dedicated to a presentation of what present-day high schools ought to accomplish for the young people enrolled in them so far as general education is concerned.

The scope of general education in high school is said to be determined by the broad goal ". . . to meet the *common* needs of youth for competence as a person and as a citizen." The authors emphasize that schools are not the only *educative* influences that contribute to the achievement of this broad goal, but they present those objectives which they regard to be within the responsibility of the high school.

Part II of the book suggests how the results of the study can be capitalized upon in school situations where use is made of the "lists of behavioral objectives" resulting from the study.

Part III--comprising considerably more than half of the book--presents a detailed classification of "proposed behavioral outcomes" under the heading: Behavioral Outcomes of General Education in High School. The three main headings of the classification are: 1) Growing Toward Self Realization, 2) Growing in Ability to Maintain Desirable Small (Face-to-Face) Group Relationships, and 3) Growing in Ability to Maintain the Relationships Imposed by Membership in Large Organizations.

Each main heading is followed by a single explanatory paragraph. Each such heading is then broken down into successively detailed statements of desired developments followed in each case by "Illustrated Behaviors." For each breakdown there is given a series of "Developmental Equivalents" which present "(Expectations for . . . students)."

The authors of the report maintain that the three directions of growth detailed in Part III will result in youth who are growing in these four "Areas of Behavioral Competence":

1. Attaining Maximum Intellectual Growth and Development
2. Becoming Culturally Oriented and Integrated
3. Maintaining and Improving Physical and Mental Health
4. Becoming Economically Competent

At the end a plan and forms for "Evaluating a Program of General Education" are presented. An extensive bibliography and index are included.

III-7 Gagné, Robert M. The Conditions of Learning. New York: Holt, Rinehart, and Winston, Inc., 1970 (second edition). Pp viii + 407. $7.95.

This book--in the words of the author--seeks ". . . to answer the question, What is known about the process of learning that can be put to use in designing better education?" He regards learning as "performance change" and describes the eight "varieties" of classifications thereof which he has identified.

A chapter is devoted to each of these eight types of learning:

Learning Type 1: Signal Learning
Learning Type 2: Stimulus-Response Learning
Learning Type 3: Chaining
Learning Type 4: Verbal Association
Learning Type 5: Discrimination Learning
Learning Type 6: Concept Learning
Learning Type 7: Rule Learning
Learning Type 8: Problem Solving

In succeeding chapters, he presents educational implications of the facts and concepts developed in the preceding chapters. Chapters 11 and 12, in particular, "The Design of Instruction," and "Resources for Learning," are rich in practical classroom and teaching applications. He refers to the teacher as ". . . the *manager of the conditions of learning*, discusses the nature and importance of objectives stated in performance terms, outlines procedures for assessing the outcomes of learning, lists and appraises the potential contributions of media for instruction, and considers the possibilities

and limitations of each of the following modes of instruction: The Tutoring Session, The Lecture, The Recitation Class, The Discussion Class, The Laboratory, and Homework."

A lengthy bibliography and an index complete the book.

Note: John M. Newell has prepared a companion to this book available from the same publisher entitled: Student's Guide to Robert M. Gagné: The Conditions of Learning (second edition).

Gagné is a prominent advocate of the *guided learning* approach to instruction. See The Process of Education and Toward a Theory of Instruction by Jerome S. Bruner (III-3) for an exposition of the *learning-by-discovery* point of view.

II-33 cites an article which reviews, analyzes, and compares the discovery learning idea and the guided learning approach.

III-8 _____. "Some Views of Learning and Instruction," Phi Delta Kappan, LI (May, 1970), 468-472.

In this article an educational psychologist gives some new answers to old and persistent questions relating to teaching and learning. Questions discussed are as follows:

1. For student learning to be most effective, how should the learning task be presented? That is, how should it be communicated to the student?

2. When the student undertakes a learning task, what kinds of activity on his part should be required or encouraged?

3. What provisions must be made to insure that what is learned is remembered and is usable in further learning and problem solving?

The answers given are based on recent learning research wherein, in the author's words, ". . . investigators are shifting from what may be called a *connectionist* view of learning to an *information processing* view."

The "information-processing" approach is discussed under sections of the following headings:

Prerequisites for learning
Coding and remembering
Retrieval and remembering

Some rather dramatic results of experimental studies are given.

A final section gives three implications for instruction and discusses each briefly.

III-9 Havighurst, Robert J. Human Development and Education. New York: Longmans, Green and Co., 1953. Pp. xi + 338. $4.95. (Now available from David McKay Company, Inc.)

The concept that there is a "crucial period" for each learning task and that there is the "*teachable moment*" gets attention in this book. The author says, ". . . the best times to teach reading, the care of children, and adjustment to retirement from one's job can be discovered by studying human development, and finding out when conditions are most favorable for learning these tasks." He calls it the "Developmental Task Concept." He identifies the following four developmental levels and, in a part devoted to each, suggests appropriate learning tasks. These parts are:

Infancy and Early Childhood
Middle Childhood
Adolescence
Adulthood and Old Age

In the fifth part of his book, he presents "An Empirical Study of Developmental Tasks in Middle Childhood and Adolescence."

Teachers who are working with the development of behavioral objectives will be interested in the implications of "developmental tasks" as sources of educational objectives. This idea gets special attention in a chapter entitled, "Developmental Tasks as Objectives of Elementary Education," and in another one headed, "Developmental Tasks and the School Curriculum."

Case studies of "success" and "failure" are included. The chapters in the final part present the results of attempts to test "the validity of the concept" presented in the book.

An epilogue, "Case History of a Concept," gives the reader a glimpse of the manner in which the developmental tasks notion developed in Havighurst's thinking and work. He concludes with the paragraph:

> The developmental task concept occupies middle ground between the two opposed theories of education: the theory of freedom--that the child will develop best if left as free as possible, and the theory of constraint --that the child must learn to become a worthy responsible adult through restraints imposed by his society. A developmental task is midway between an individual need and a societal demand. It partakes of the nature of both. Accordingly, it is a useful concept for students who would relate human behavior to the problems of education--useful without, I hope, obscuring important issues in educational theory.

III-10 Kearney, Nolan C. Elementary School Objectives: A Report Prepared for the Mid-Century on Outcomes in Elementary Education. New York: Russell Sage Foundation, 1953. Pp. 189. $5.50.

This report was the result of a joint venture of the Educational Testing Service, the Russell Sage Foundation, the U. S. Office of Education, and the Department of Elementary School Principals of the National Education Association. "The Mid-Century Committee on Outcomes in Elementary Education was assembled to describe for educators, test-makers, and interested citizens the measurable goals of instruction in our American elementary schools." This report is the published result of this endeavor.

The study looked at elementary education in terms of three questions:

Why do we send our children to school?

What do we expect them to learn at school?

What *do* they learn--and how well?

Three committees (collectively referred to by the title already given) worked on the study with Kearney as special consultant and writer of the report. The three committees were: Committee of Consultants, Committee of Critics, and Survey Committee.

Nine broad "Areas of Elementary Learning," each with four "Types of Behavioral Change" and a "Set of Determining Conditions" for the "Primary Period," the "Intermediate Period," and the "Upper-Grade Period," are identified and described.

The "Areas of Elementary Learning" are:

1. Physical Development, Health, and Body Care
2. Individual Social and Emotional Development
3. Ethical Behavior, Standards, Values
4. Social Relations
5. The Social World
6. The Physical World
7. Esthetic Development
8. Communication
9. Quantitative Relationships

The "Types of Behavioral Change" are:

A. Knowledge and Understanding
B. Skill and Competence
C. Attitude and Interest
D. Action Pattern

The concluding part of the report is devoted to "Implications for Educational Practice, Research, and Measurement."

III-11 Krathwohl, David R., Benjamin S. Bloom, and Bertram B. Masia. Taxonomy of Educational Objectives (The Classification of Educational Goals) Handbook II: Affective Domain. New York: David McKay Company, Inc., 1964. Pp. xiv + 196. Paper. $2.50.

Handbook II (see III-1 for an annotation which lists all four "domains" promulgated to date) presents a classification of educational objectives in the *affective domain* under the following headings:

1.00 Receiving
2.00 Responding
3.00 Valuing
4.00 Organization
5.00 Characterization by a value or value complex

The method of presentation is much the same as that employed in Handbook I (see III-1).

III-12 Mager, Robert F. and Kenneth M. Beach, Jr. Developing Vocational Instruction. Palo Alto, California: Fearon Publishers, 1967. Pp. xii + 83. Paper. $2.00.

The Foreword to this book (prepared by James D. Finn, chairman, Vocational Educational Committee, Educational Media Council--location not identified) states that it is an ". . . attempt to make available to the vocational educator the essence of modern educational technology . . .." Finn--in praise of the clarity with which he feels that the authors have written their material--says,

> . . . the material is presented in plain English. This is no small favor in an age where pedantic ponderosity seems to be the order of the day, where the burden of understanding so often is placed squarely on the reader. It is no trick or accomplishment to say things that no one will understand. It *is* something of an accomplishment to be able to say things in a way most people will understand, and that is what I believe the authors have done in this book.

The emphasis in the book is on what the teacher "*does*" rather than on ". . . the qualities that make a successful teacher," says another writer of prefatory comments (one I. K. Davis, Brampton, England--otherwise unidentified).

After the Foreword and the Preface, the authors themselves enter the scene with their own two-page Introduction. They say, "The goal of this book is to describe the steps that must be carried out if one is to become as expert in the skill of systematic course development as he is in the practice of his own vocation or technical specialty."

A good way to indicate briefly how this book pursues its goal is to say that it is organized somewhat in the form of 14 "job sheets." These 14 areas are:

1. Strategy of Instructional Development
2. Job Description
3. Task Analysis
4. Target Population
5. Course Objectives
6. Course Prerequisites
7. Measuring Instruments
8. Types of Performance
9. Selection of Instructional Procedures
10. Sequencing Instructional Units
11. Lesson Plan Development
12. Improving Course Efficiency
13. Improving Course Effectiveness
14. Sources of Instructional Materials

The seven-page discussion (Item 5 in the above list) of "Course Objectives" indicates that, collectively, they are ". . . the blueprint of student performance you want to develop." It ". . . will describe what the student is expected to be like at the time . . . he leaves your influence." They say, "Course objectives represent a clear statement of instructional intent, and are written in any form to clarify that intent." This statement is followed by expressing five characteristics of statements of objectives which they say apply both to ". . . those that describe specific performances of the student and those that may be needed to describe his attitudes." Examples of objectives are given and three references (including Mager, R. F., Preparing Instructional Objectives--see I-17) are given for further reading.

Included in the extensive bibliography at the end of the book are references and sources referring both to general treatments and to applications in business and industry.

III-13 Moore, Maxine Ruth. A Proposed Taxonomy of the Perceptual Domain and Some Suggested Applications. (Test Development Report, TDR-67-3.) Princeton, New Jersey: Educational Testing Service, August, 1967. Pp. iv + 22. Write for availability.

Taxonomies of educational objectives now appear in the literature in four domains: *cognitive*, *affective*, *psychomotor*, and *perceptual*, and they have been published in the order listed (see III-1, III-11, and III-16).

The perceptual areas as identified and illustrated by Moore are:

1. Sensation
2. Figure Perception
3. Symbol Perception
4. Perception of Meaning
5. Perceptive Performance

Illustrative applications are presented in a vocational area (auto mechanics) and an artistic area (music). Reference to applications in the professions such as medicine and engineering are made.

She refers to the cognitive classification as illustrating the principle of "*complexity*," the affective as the principle of "*involvement*," and the perceptual as the principle of "*integration*." She states, "The behavioral response called for engages the total individual. It appears appropriate, therefore, to term the principle of the organization of the perceptual domain *integration*."

Thomas S. Baldwin, in a chapter, "Evaluation of Learning in Industrial Education," appearing in the Handbook on Formative and Summative Evaluation of Student Learning, presents a table showing applications for all four domains and expresses the belief that the perceptual domain covers areas not fully classifiable as strictly *pyschomotor*. He introduced his case for this domain by saying,

> . . . this author considers the concept of a perceptual domain to be an important one for industrial education. . . . many of the behavioral changes that occur during training, and that have traditionally been referred to as psychomotor, could be classified more appropriately as perceptual. (See III-2.)

III-14 Newell, John M. Student's Guide to Robert M. Gagné: The Conditions of Learning (second edition). New York: Holt, Rinehart and Winston, Inc., 1970. Pp. xii + 164. Paper. $2.95.

"This Student's Guide is designed to assist in-service and preservice teachers in reading Gagné's *Conditions of Learning (Second Edition)*." It is a sort of chapter-by-chapter commentary, summary, or supplement to Gagné's book, but it is not a workbook. Note: See III-7.

Newell has written in the light of Gagné's other writings as well as the book specifically referred to and on the basis of his experiences with students in his own university classes. He states that Gagné read his Guide and made helpful "comments and suggestions." Although he takes credit for authorship, he dedicates it to his wife who gave ". . . encouragement and constructive criticism at every stage in the development of this Guide."

III-15 Purkey, William Watson. Self Concept and School Achievement. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970. Pp. 86. Paper. $1.95.

This book is a brief guide and review of the pertinent research concerning the relationship between self concept and school achievement. It attempts to point out research findings concerning this often neglected area in the affective domain.

It provides a detailed reference to research bearing on the author's views of self concept. There is a broad reliance on the historical treatment of self concept as a legitimate area of educational concern combined with a fairly extensive delineation of many contemporary studies which a teacher should find useful as an introduction to this vital concept.

As a guide, the book provides ways in which the several views of self and its development can be considered by the classroom teacher in his or her lesson planning. A major point of the book is that the teacher's assistance in the growth and development of the student's self concept can and should be given as much attention as traditional subject matter concerns in curriculum planning. This requires unconditional acceptance of the student because the self emerges as a result of experiences with others, and our ultimate behavior will be according to our beliefs.

III-16 Simpson, E. J. "The Classification of Educational Objectives, Psychomotor Domain," Illinois Teacher of Home Economics, Vol. X (Winter 1966-67), 110-144.

Although Handbooks I and II recognize the *psychomotor domain* of educational objectives as well as the *cognitive* and the *affective* (see III-1 and III-11), Simpson's work appears to represent the most serious attempt to develop the various categories and subcategories characteristic of this area. Her classification has the following major categories:

1.00 Perception
2.00 Set
3.00 Guided response
4.00 Mechanism
5.00 Complex overt response

Consistent with Handbooks I and II, she too defines each major category and sub-category and illustrates by describing sequences in learning to perform various types of tasks having significant psychomotor components.

III-17 Stufflebeam, Daniel L. and others. Educational Evaluation and Decision Making. Bloomington, Indiana: Phi Delta Kappa, Inc., 1971. Pp. xxviii + 368. $7.50.

The Purpose of Evaluation
Is Not to Prove
But to Improve

> This book . . . is organized to be responsive to four objectives. . . . Its purpose is to identify and assess approaches to deal with these . . . to synthesize a new definition and methodology of evaluation resulting from the assessment . . . and to provide operational guidelines for implementing the proposed new approach.

Each of these two quotations are the sole contents of two separate introductory pages of this report of the Phi Delta Kappa National Study Committee on Evaluation resulting from its work under the chairmanship of Daniel L. Stufflebeam of The Ohio State University. Other members of the group were: Walter J. Foley, University of Iowa; William J. Gephart, Phi Delta Kappa; Egon G. Guba, Indiana University; Robert L. Hammond, Montana State University; Howard O. Merriman, Columbus, Ohio, Public Schools; and Malcolm M. Provus, University of Virginia. Instead of presenting "a book of disjointed, individually signed chapters . . . they have developed a single integrated and internally consistent volume, signed collectively by the entire study committee."

In recognition of the "multiplicity of the intended audience," chapters were written "to have differential appeal for different groups." A guide for reading the book is suggested for each of four types of readers: (1) educational administrators, organizational theorists, and funding agency personnel; (2) evaluators, computer specialists, systems analysts, and research methodologists, (3) planners, philosophers, and curriculum specialists; and (4) teachers and others. Each type of reader is invited to read each chapter, as indicated, on one of these bases: *scan*, or *read*, or *study*.

Essentially the book seeks to remedy the fact that "previous conceptions and operations called '*evaluation*' /italics added/ have not been adequate . . .." The four objectives that the book is supposed "to be responsive to" are:

1. To expose, in detail, five problem areas: definition, decision making, values and criteria, administrative levels, and the research model.
2. To identify and assess extant or emergent formulations that might be used in conceptualizing solutions to these five problems, and to fashion them into tentative solutions.

3. To synthesize a new definition and methodology of evalution that builds upon the products of objective 2.
4. To provide some operational guidelines for implementing the proposed new approach in terms of personnel, organization, and administration.

Educational evaluation is defined in an eight-element statement. Each of these key terms is set off by parentheses in the definition which reads as follows:

> *Educational evaluation is the (process) of (delineating), (obtaining), and (providing) (useful) (information) for (judging) (decision alternatives).*

Each of the eight terms is defined in turn and "The /total/ definition serves as the basis for all subsequent materials in this book."

A unique feature of this book is an authors' annotation on a page preceding each chapter. These annotations for Chapters 3 through 11 are quoted below:

> Chapter 3 . . . deals with decision making . . . introduces the concepts of the decision process (awareness, design, choice, action), the decision settings (metamorphic, homeostatic, incremental, neomobilistic), the decision models (synoptic, disjointed incremental, planned change, and others), and decision types (planning, structuring, implementing, recycling) . . . and evolves principles to utilize these in relating evaluation and decision making.
>
> Chapter 4 . . . focuses on identifying the values that exist in a decision-making situation . . . deals with criteria for choice in terms of two types of criterion models . . . a model of 'what should be,' Type I, and a model of 'how to get what should be,' Type II. . . . Type I is substantive, Type II is process. . . . The chapter describes and illustrates the sources of these models and ways evaluators use them.
>
> Chapter 5 . . . turns to the problem of administrative levels and the monumental task of responding to the demands from persons and groups for information of many different kinds . . . and deals with it in systems terms, showing how both project and program needs can be met by an appropriately designed information system.
>
> Chapter 6 . . . moves to the question of methodology . . . deals in detail with techniques for delineating, obtaining, and providing information . . . calls attention to both old and new ways to use existing techniques for these purposes . . . and makes plain the areas in which additional techniques need to be developed.

Chapter 7 . . . draws the concepts of the earlier chapters into a cohesive theoretical presentation . . . delineates four types of evaluation: context, input, process, and product . . . and presents an evaluation model which interrelates the four types of evaluation and the major concepts presented in Chapters 2 through 6. (This is the so-called CIPP Model.)

Chapter 8 . . . moves to consideration of implementation . . . develops a system of variables for describing instructional programs . . . and implements the four strategies for evaluation discussed in the preceding chapter in a simulated experience as it might occur in a local school district.

Chapter 9 . . . provides guidelines relating to staffing, organization, and administration of evaluation units . . . illustrates these principles with case studies of units at the local level and makes recommendations for state units . . . and concludes with suggestions for the development and installation of evaluation units.

Chapter 10 . . . analyzes the evaluator's role into several components (interface, technical, and administrative roles) . . . discusses one model for determining these skills . . . and makes some general observations about the substance and methodology of the evaluator's training experience.

Chapter 11 . . . looks at the preceding chapters in retrospect . . . evaluates the effort to provide an adequate theoretical base for evaluation . . . points to issues, unsolved problems, unmet needs, unrealized opportunities . . . and projects what fruitfully might be done next and by whom.

III-18 Tyler, Ralph. Basic Principles of Curriculum and Instruction. Chicago: The University of Chicago Press, 1949. Pp. vi + 128. Paper. $2.00.

This book could appropriately be sub-titled: Four Fundamental Questions. The four questions (a chapter is devoted to each one) considered by the writer are:

1. What educational purposes should the school seek to attain?
2. How can learning experiences be selected which are likely to be useful in attaining these objectives?
3. How can learning experiences be organized for effective instruction?
4. How can the effectiveness of learning experiences be evaluated?

The final chapter discusses: How a school or college staff may work on curriculum building.

The following portion of the first paragraph of the discussion of the first of the four questions indicates quite well the focus of the entire book. It reads as follows:

> . . . if an educational program is to be planned and if efforts for continued improvement are to be made, it is very necessary to have some conception of the goals that are being aimed at. These educational objectives become the criteria by which materials are selected, content is outlined, instructional procedures are developed and tests and examinations are prepared. All aspects of the educational program are really means to accomplish basic educational purposes. Hence, if we are to study an educational program systematically and intelligently we must first be sure as to the educational objective aimed at.

In answer to the first question, five possible ways of "determining the ends to be attained by the educational program" are identified and discussed. The first is: "Studies of the Learners Themselves as a Source of Educational Objectives."

The author states that he does not so much seek to answer the questions as to develop a rationale for answering them. This book is referred to frequently in the current literature relating to the development and use of behavioral or performance objectives as determiners of curriculum content. To an important degree he might be said to be one of the "fathers" of the developing trend toward the use of behavioral objectives.

III-19 Weisgerber, Robert A. (editor). Developmental Efforts in Individualized Learning. Palo Alto: American Institutes for Research, 1971. Pp. xiv + 361. Paper. $6.50.

A companion book by the same author and publisher (Perspectives in Individualized Learning) discusses ". . . some of the assumptions that underlie the concept of individualized learning, such as the determination of student need, specification of learning goals, and measurement of outcomes."

The book consists of five parts. Aside from a brief editor's introduction to each part, reprints of already published materials are included. The first two parts review two individualized programs operating in locations throughout the country. They are PLAN (Program for Learning in Accordance with Needs), and IPI (Individually Prescribed Instruction). The third reviews individualized learning as it presently operates in selected elementary and

secondary schools. Among them are I/D/E/A/ (Institute for the Development of Educational Activities, a project of the Charles F. Kettering Foundation); the UNIPAC Bank (UNIPAC being a term referred to something like a unit and a package); and LAP (Learning Activity Package). The fourth part is devoted to individualized learning in colleges and universities. The final section discusses the probable place of individualized learning in the future.

Like the companion volume, this book has both a *name* and a *subject* index.

III-20 _____. Perspectives in Individualized Learning. Palo Alto: American Institutes for Research, 1971. Pp. xiv + 406. Paper. $6.50.

A companion book by the same author and publishers (Developmental Efforts in Individualized Learning) is designed to ". . . provide the reader with an understanding of how the underlying assumptions and operational components are being applied in major developmental projects presently under way across the country. The reader will also become aware of the diversity of practice that presently characterizes individualized learning at the local school level and in higher education."

The book consists of reprints of already published articles and parts of books arranged in ten parts, each preceded by a brief introduction by the editor. The titles of these parts are: Some Underlying Assumptions Concerning the Need for Individualized Learning; Mental Abilities: A Possible Basis for Individualization; Individual Differences: Do They Make a Difference? (A Look at Reading); Individual Differences: How Should They Be Measured and Accommodated?; Educational Objectives: The Key to What Is To Be Learned; Evaluation: The Key to Improving the Learning Environment; The Teacher: A New Role; Learning Activities: Individualized or Interactive?; The Learning Environment: Instructional Technology; and Computers and the Individualization of Learning.

Probably there is no single publication available that presents within its covers such a comprehensive sampling of the current flood of literature relating to *individualized learning*. Many of the articles are accompanied by an extensive list of references for further reading--in all a veritable "smorgasbord" of something like 330, counting repetitions. A *name index* and a *subject index* are included. The editor says that his wife helped him. To the degree that--among other features of this book--the index was prepared as a result of her help, many users will be glad that she did.

Part Four: Audio-Visual Materials Relating to Behavioral Objectives

IV-1 Popham, W. James. A tape relating to *Criterion-Referenced Instruction.* Tape #21. Los Angeles: Vimcet Associates, 1971. $10.00.

The publisher's annotation of this tape follows:

> Professor W. James Popham introduces his instructional methodology class to an instructional strategy designed to increase the precision with which educators make instructional decisions. Recorded in late 1969, this 42 minute tape combines humor and persuasion in almost equal quantities to encourage educators to focus on the outcomes of their instructional efforts. Suitable for use in pre-service and in-service programs.

IV-2 _____ and Eva L. Baker. Eighteen filmstrip-tape programs for pre- and in-service teacher education, industrial and military instructor training. Los Angeles: Vimcet Associates, various recent dates. Price per program, $15.00; price for printed Utilization Guide, $2.00.

Each of the 18 programs includes:

- Illustrated filmstrip
- Accompanying audio-taped narration, approximately 30 minutes in length, with tone signals for manually advancing the filmstrip
- Instructor's manual suggesting techniques for using the program
- Statement of specific objectives accomplished by the program
- Reports of validation studies regarding the program's effectiveness
- Sample copy of optional response sheet
- Sample copy of pre- and/or post-test

The title and the publisher's annotation of each program follow:

#1. EDUCATIONAL OBJECTIVES. This program assists one in developing precisely stated instructional goals. At its conclusion viewers are able (1) to distinguish between behaviorally and non-behaviorally stated instructional objectives and (2) convert non-behavioral objectives to a form specifying student post-instruction behavior.

#2. SYSTEMATIC INSTRUCTIONAL DECISION-MAKING. A general instructional model is described which can be used by teachers in deciding (1) which instructional activities to include in a teaching sequence and (2) whether the instructional sequence was effective. Differences between the "teacher-artist" and "teacher-technician" conception of instruction are examined.

#3. SELECTING APPROPRIATE EDUCATIONAL OBJECTIVES. What objectives should a teacher attempt to achieve? This program provides several tools with which to answer this question. Demonstrating that mere specificity of instructional goals does not

insure worthwhile goals, the program develops the viewer's skills in using modified versions of the *Taxonomies of Educational Objectives*.

#4. ESTABLISHING PERFORMANCE STANDARDS. This program describes concrete ways of judging the adequacy of student accomplishment. Both qualitative and quantitative techniques for assessing learner competence are illustrated, including intellectual, attitudinal, and psychomotor behavior changes. The viewer is taught (1) to distinguish between performance standards used to differentiate achievement of students and those which aid the teacher in judging his own performance and (2) to construct performance standards for objectives in a number of subject fields.

#5. APPROPRIATE PRACTICE. One of the most important principles which can be used in selecting effective instructional sequences is to "give the learner opportunities to practice the behavior implied by the instructional objective." This program examines two forms of appropriate practice, namely, equivalent and analogous practice, and contrasts these with pre-requisite tasks and irrelevant behavior. The viewer learns to identify each of these and to generate his own appropriate practice activities.

#6. PERCEIVED PURPOSE. This program deals with motivation or, more precisely, the necessity of having learners perceive the worth of what they are studying. Four different methods of promoting a suitable "learning set" are treated, i.e., by deduction, induction, exhortation, and extrinsic rewards. The viewer learns (1) to identify these four procedures for promoting perceived purpose and (2) to develop instructional activities incorporating each procedure. An effective "surprise" ending which concludes the program dramatizes the importance of this principle.

#7. EVALUATION. This program treats a topic of great interest to all involved in instruction, discussing a rigorous system for assessment of teaching. Test construction, item sampling, and interpretation of student performance data are given attention and the critical role of pre-assessment of learner competency is emphasized. The viewer learns to select and construct test items appropriate to given objectives, to design both formal and informal pre-assessment procedures, and to make appropriate inferences regarding instruction based on data obtained from his students.

#8. A CURRICULUM RATIONALE. Emphasizing the importance of selecting defensible objectives, this program describes the essentials of Ralph Tyler's approach to curriculum building. The viewer is given practice in employing the major components of the Tyler model.

#9. DEFINING CONTENT FOR OBJECTIVES. In this program the application of behavioral objectives is made feasible in an ordinary classroom situation. Teachers are taught that operational objectives should specify content that is generalizable beyond a single test item. The viewer learns to identify objectives which do and do not exemplify content generality and to write objectives which do.

#10. IDENTIFYING AFFECTIVE OBJECTIVES. Perhaps the most difficult task of those who must formulate objectives is the generation of non-cognitive, that is, affective objectives. This program provides a four step strategy for designing affective objectives and gives the viewer practice in using the strategy.

#11. ANALYZING LEARNING OUTCOMES. In this program techniques of task analysis are applied to learning objectives. Practice is provided so that an operational objective can be analyzed into sub-tasks, designated as either entry or en route skills. Use of a particular strategy is advocated in which instruction is approached in terms of learners' response rather than teacher presentations.

#12. KNOWLEDGE OF RESULTS. This program stresses the importance of allowing the learner to judge the adequacy of all important responses made during an instructional sequence. The viewer is given practice in discriminating between hypothetical situations in which an instructor does or does not provide knowledge of results.

#13. TEACHING UNITS AND LESSON PLANS. This program describes recommended elements for the two most popular forms of instructional plans, that is, the teaching unit and the lesson plan. The viewer is given practice in identifying procedures which are appropriate for lesson plans, teaching units, both, or neither.

#14. THE TEACHING OF READING. This program describes an empirical model applied to the improvement of reading instruction. The viewer learns to describe the model and to identify examples of reading objectives and activities which illustrate the use of this approach. Practice is provided in writing test items which measure reading skills.

#15. DISCIPLINE IN THE CLASSROOM. This program describes a translation of operant methods to problems of classroom control. The viewer learns to describe the basic rules of contingency management, to identify instances when operant methods are being used, and to write solutions to common classroom behavior problems according to a reinforcement paradigm.

#16. MODERN MEASUREMENT METHODS. Two recent conceptions in educational measurement are examined in this program, namely, *item*

sampling and *criterion-referenced measurement*. Their implications for diverse evaluation situations are explored. The viewer is given practice in deciding when to use these approaches.

#17. INSTRUCTIONAL SUPERVISION: A CRITERION-REFERENCED STRATEGY. A goal-referenced approach to supervision is advocated in this program wherein the supervisor's two primary responsibilities are to (1) aid the instructor select more defensible objectives and (2) assist the instructor to attain those objectives.

#18. EXPERIMENTAL DESIGNS FOR SCHOOL RESEARCH. Four simplified research designs suitable for use in evaluating educational programs are treated. The viewer is given practice in distinguishing between three weaker designs and the four recommended designs. Practice is also provided regarding when to employ each design.

UTILIZATION GUIDE (printed). A new addition to the Vimcet series is a printed utilization guide which offers suggestions to users regarding the manner in which certain programs can be coordinated. For example, possible sequences of programs are described for pre- and in-service teacher education courses, supervisory institutes, instructor training sessions. Follow-up activities are described along with an extensive set of relevant readings. Two position papers are included for use in discussion sessions correlated with the programs.

IV-3 _____. Two filmstrip-tape programs on *Teaching Performance Tests*. Los Angeles: Vimcet Associates, 1971. Price per tape, $15.00.

The title and the publisher's annotation of each program follow:

#19. An illustrated filmstrip-tape program, How to Prepare Teaching Performance Tests, which describes the necessary elements in an effective teaching performance test and offers practical recommendations regarding how such measures can be constructed locally. Fifty-four frames; approximately 40 minutes duration.

#20. An illustrated filmstrip-tape program, Using Teaching Performance Tests for Instructional Improvement and Skill Assessment, which indicates how short duration teaching performance tests can be used (1) to improve teachers' skills in promoting pre-specified learner objectives, and (2) to measure this important aspect of instructional proficiency. Forty-one frames; approximately 40 minutes duration.

IV-4 Popham, W. James and George F. Kneller. A tape relating to the value of measurable instructional objectives entitled *Behavioral Objectives Debate*. Los Angeles: Vimcet Associates, 1971. $10.00.

The publisher's annotation of this tape follows:

Professors Kneller and Popham engage in a no-holds-barred debate regarding the strengths and weaknesses of measurable instructional objectives. Dean Goodlad provides an insightful background for the major issues. An audience question and answer session concludes the 47 minute recording. The debate, taped live in mid-1969, is ideal for use with pre-service classes or as a stimulant for in-service discussion sessions.

A Final Note

In a real sense, this bibliography will be out of date when it is released. It is merely a "snapshot" of a rapidly developing flood of available materials. For example, on the day that copy for this publication was sent to the printer, the following "Just Released" announcement of "Three Filmed Lectures" was received:

Hunter, Madeline. Three Filmed Lectures, *Behavioral Objectives and Accountability, Objectives in the Cognitive Domain,* and *Objectives in the Affective Domain*. 26740 Latigo Shore Drive, Malibu, California 90265: Special Purpose Films, 1971. $400, purchase of all three; $120, rental of all three. Separate purchase and rental, respectively, $150 and $45.

The publisher's annotations follow:

Behavioral Objectives and Accountability

In this excellent introductory film Dr. Hunter discusses the importance of behavioral objectives for specifying learning outcomes, evaluating achievement and suggesting learning activities for students. She stresses that desirable objectives in creativity, critical thinking, attitudes and feelings can be stated behaviorally. The power of perceivable student behavior and specific content is made explicit. Behavioral objectives are demonstrated to be an essential tool of the successful creative teacher.

Objectives in the Cognitive Domain

In clear and comprehensible language, Dr. Hunter teaches the six levels of Bloom's *Taxonomy of Educational Objectives, Handbook I: Cognitive Domain*. Classroom examples for each level are cited in several subject areas. The relationship of behavioral objectives to problem solving, critical thinking, and the higher cognitive processes is described. The importance of the taxonomy to individualization of instruction is demonstrated with examples of use in daily teaching.

Objectives in the Affective Domain

With remarkable clarity, Dr. Hunter teaches the Krathwohl *Taxonomy of Educational Objectives: Handbook II: Affective Domain*. Levels of internalization of feelings, attitudes and appreciations are discussed in classroom terms. Using the taxonomy to teach appreciation of poetry

and to develop desirable self-concept, examples of behavioral objectives for each level of this domain are developed in detail. In this film, Dr. Hunter shows how values and attitudes can become teachable objectives.

Publishers' Addresses

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